



United States Department of Agriculture
Forest Service

Rico-West Dolores Roads and Trails (Travel Management) Project

Draft Environmental Impact Statement

Dolores Ranger District, San Juan National Forest, Dolores and Montezuma Counties, Colorado
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Executive Summary

PROJECT PURPOSE AND NEED

This Draft Environmental Impact Statement (DEIS) for the Rico-West Dolores (RWD) Roads and Trails (Travel Management) Project focuses on 244,554 acres of National Forest land north of Dolores, Colorado, on the Dolores Ranger District. The current road and trail system on this landscape supports a wide variety of uses, including recreation, livestock grazing, and timber harvesting. This project addresses specific issues related to recreation settings, protection of wetlands, livestock distribution, and maintenance feasibility. It also complies with the Travel Management Rule described in the *Federal Code of Regulations*, which requires the Forest Service to designate a system of roads, trails, and areas for motorized use by vehicle class and, if appropriate, by time of year. The final decision will either verify or revise the 2014 Motor Vehicle Use Map.

Chapter 1 explains how the public has been involved in the identification of major issues that merited further analysis and, ultimately, the development of possible courses of action. Public scoping helped the San Juan National Forest Interdisciplinary Team (ID Team) limit its focus to the following, most pressing concerns:

- * Loss or Reduction of Motorized Recreation Opportunities
- * Semiprimitive Nonmotorized Recreation Opportunities
- * Environmental Impacts to Wetlands, Elk Habitat, Fisheries and Vegetation
- * Impacts to Livestock Distribution
- * Maintenance Feasibility
- * Economic Impacts to Local Communities

Note: Because this DEIS often identifies locations by road or trail names/numbers, readers might want to print out the maps in Appendix A and refer to them frequently while reading this document.

OVERVIEW OF ALTERNATIVES

As required by the National Environmental Policy Act, this analysis included the creation and consideration of Alternatives to the Proposed Action that went out for public scoping in December 2014. The ID Team conducting this analysis considered many factors when formulating these Alternatives. Although road designations are fairly constant across the Alternatives, motor vehicle designations on trails differ between them.

This DEIS does not identify a preferred alternative. The public is encouraged to comment on the individual aspects of each alternative.

Chapter 2 discusses these five possible Alternatives, which are briefly summarized below:

Alternative A – The No Action Alternative proposes to continue the current situation and would have no timing restrictions.

Alternative B (Proposed Action) – This Alternative is the December, 2014, Proposed Action, with refinements. It would make minor changes to the road system, remove motorcycles from some trails to address resource impacts, livestock distribution concerns and balance requests for nonmotorized areas.

Compared to the other Alternatives, this Alternative would have the strictest timing restrictions. New 62-inch trails would be added for ATV/UTV riding.

Alternative C – This Alternative would reestablish motorcycle use on some, but not all, of the trails that would be closed to motorcycle use under Alternative B. It proposes new motorcycle trails in order to create connections and adds 62-inch trails in the Black Mesa area. Timing restrictions of motor vehicle use on trails would be less restrictive under this Alternative than they would be under Alternative B.

Alternative D – This Alternative focuses on a semiprimitive nonmotorized recreation setting in the Bear Creek drainage by removing motorcycle use. However, Alternative D would continue to provide a motorcycle riding trail system throughout the rest of the analysis area that would be similar to Alternative C's system. Timing restrictions would be the same as those proposed under Alternative C.

Alternative E – Like Alternative D, this Alternative would provide a semiprimitive nonmotorized setting throughout the entire Bear Creek drainage and similarly, it would create nonmotorized settings on North Calico Trail and connecting trails, as well as in the East Fork Trail area. Motorcycle riding in this Alternative would be focused on areas from Eagle Peak Trail south to Taylor Mesa. Timing restrictions would be the same as those under Alternative C.

Other Alternatives were considered but eliminated from detailed study. Examples include adopting the 2005 Visitor Map, which shows areas available for cross-country motor vehicle travel; creating a new area designated for motor vehicle travel; creating parallel nonmotorized routes; and allowing motorcycle use on Salt Creek Trail. Chapter 2 explains the rationale for eliminating these Alternatives from detailed study.

Road Miles

Under each of the Action Alternatives (B, C, D, and E), the open road system has been reconfigured slightly from the current situation. These changes help narrow the gap between available road maintenance funding and maintenance needs. Proposals for change include converting some roads to trails; upgrading some closed/stored roads to open roads; designating some roads for administrative use only; or decommissioning certain roads.

The current situation (No Action Alternative) contains 169.16 miles of closed/stored roads, which the Action Alternatives would reduce to 125.5 miles.

The final decision will likely result in even fewer miles than were previously identified as the minimum road system in the recent Travel Analysis Report for the Dolores District.

Alternative	A	B	C	D	E
Miles Designated Open to All Wheeled Motor Vehicles	205.5	198.42	198.42	198.42	198.42
Miles of Closed/Stored Roads Not Open to Motor Vehicles	169.16	125.5	125.5	125.5	125.5

Trail Miles

Trails in the RWD area are managed for hiking, horseback riding, mountain biking and – in some instances – motorcycle use. Trails are “single-track” and vary in width up to approximately 36 inches (3 feet). The five Alternatives differ in the amount and configuration of motorcycle loops and connections. When comparing Alternatives, it can be helpful to consider trail riding *experiences* (not just miles). For instance, motorcycle enthusiasts would enjoy similar levels of connections, destinations, and vistas under Alternatives A, B, or C with fewer opportunities in D and E.

Trails managed for ATVs are rare in the RWD area, with only 7 miles designated currently. Trails for ATV and UTV riding are expanded under all the Action Alternatives. Some of these trails would be created by converting roads to trails. Alternative A includes the existing Willow Divide OHV Trail. Alternatives B, D, and E would include three new loop trails (Groundhog, Lone Cone, and Taylor OHV Trails), and Alternative C would also include a trail on Black Mesa (Black Mesa OHV Trail). Under all the Action Alternatives (B, C, D, and E), these trails would be increased from 50 inches to 62 inches to accommodate use by side-by-side UTVs, which are gaining popularity. (The current width of such trails under Alternative A is 50 inches and would not accommodate most side-by-side machines.)

The extent to which trails would provide semiprimitive nonmotorized recreation settings varies, depending on the Alternative. Semiprimitive nonmotorized settings exist currently, and would be expanded under each of the Action Alternatives. Alternative E would provide the largest areas of semiprimitive nonmotorized settings, followed by Alternative D¹.

Alternative	A	B	C	D	E
Miles Designated Open to Motorcycles (and All Other Nonmotorized Uses)	114	86	100	88	65
Miles Open to Wheeled Motor Vehicles 50-Inches or Less (ATVs, Motorcycles)	7	*	*	*	*
Miles with a Special Designation Open to Wheeled Motor Vehicles 62-Inches or Less (ATVs, UTVs, and Motorcycles)	*	15	20	15	15

Timing restrictions for motor vehicle use of trails is proposed under all the Action Alternatives to enhance wildlife habitat and reduce motor vehicle impacts to hunters. Analysis also suggests that restrictions may lessen impacts to wetlands and rare plant species at specific locations if trails are drier when use begins.

Alternative	Motorcycle Timing Restrictions for Trails	ATV/UTV Timing Restrictions for Trails
A	None	None
B	Closed from 9/9 to 6/30 Open from 7/1 to 9/8	Closed from 12/1 to 6/30 Open from 7/1 to 11/30

¹ This project does not make decisions about nonmotorized trails. Currently, there are 142 miles of nonmotorized trails, which would increase as follows: Alternative B = 180, Alternative C = 167, Alternative D = 179, and Alternative E = 203.

Alternative	Motorcycle Timing Restrictions for Trails	ATV/UTV Timing Restrictions for Trails
C, D, and E	Closed from 11/1 to 5/30 Open from 6/1 to 10/30	Closed from 12/1 to 5/30 Open from 6/1 to 11/30 Black Mesa OHV Trails Only: Closed from 9/9 to 5/30 Open from 6/1 to 9/8

EFFECTS ON THE HUMAN ENVIRONMENT

Chapter 3 of this DEIS describes the effects of the Alternatives on natural and cultural resources. These effects depend upon road and trail proximity to natural features such as wetlands, sensitive soils, rare plant habitat, and elk habitat. Chapter 3 also describes potential effects on public and agency uses, including access for gathering Forest products, dispersed camping, hunting, and range or weed management. The costs of new trail developments or realignments and long-term trail maintenance scenarios for both roads and trails also vary by Alternative.

The table below provides a very brief summary of environmental impacts. Impacts assume implementation of Design Features listed in Appendix B and discussed in Chapter 3.

Resource	Alternative A (No Action)	Alternative B (Proposed Action)	Alternative C	Alternative D	Alternative E
Elk Habitat	Effective elk habitat with connectivity	Same as Alternative A (effective habitat with connectivity) with some polygons slightly larger than Alternative A	Same as Alternative A (effective habitat with connectivity) with some polygons smaller than Alternative B but larger than Alternative A	Same as Alternative A (effective habitat with connectivity) with some polygons smaller than Alternative B but larger than Alternative A, including slight increase in Bear Creek polygon	Same as Alternative A (effective habitat with connectivity) with some polygons larger due to trails closed to motorcycles
Risk of Weed Spread Miles = Risk	Most	Less than Alternative A	Less than Alternative A	Less than Alternatives A, B, or C because one less user group on some trails	Least because one less user group on many trails
Impacts to Streams from Crossings or Close Proximity	Most	Less than Alternatives A and C but more than Alternatives D and E	Less than Alternative A, more than Alternatives B, D, or E	Less than Alternatives A, B, or C and more than Alternative E	Least (Note: Trails still exist in current location but user group changes)
Impacts to Fens or Unverified Fens	Most	Least	More than Alternative B, less than Alternative A (most impact of action alternatives)	More than Alternative B, less than Alternative A or C	More than Alternative B, less than Alternative A, C or D
Impacts to Riparian Vegetation	Most	Least	More than Alternative B, Less than Alternative A (most impact of action alternatives)	More than Alternative B, less than Alternative A or C	More than Alternative B, less than Alternatives A, C or D
Impacts to Sensitive Fisheries	Most	Least	More than Alternative B but less than Alternative A	Same as Alternative C	Same as Alternative C

GLOSSARY

A Glossary of terms follows Chapter 3.

APPENDICES

The Appendices at the end of this DEIS consist of

- Maps (Appendix A),
- Design Features (Appendix B),
- Sub-Area Descriptions (Appendix C)
- Crosswalk with Travel Analysis Process Report (Appendix D).

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1 PURPOSE AND NEED

1.1 BACKGROUND

1.1.1 Project Location and Setting

The Rico-West Dolores (RWD) project area, which occupies portions of Dolores and Montezuma counties in southwest Colorado, consists of approximately 244,255 acres of National Forest System (NFS) lands and a transportation system of motorized roads and trails.

The Rico West Dolores landscape varies from mesas with huge expanses of aspen stands to snow-covered peaks, and steep slopes of dense conifers. The area is well known for hunting opportunities, camping, and challenging trails. The planning area is bisected by Hwy 145 which follows the Dolores River and is part of the San Juan Scenic Byway. This highway travels along the valley floor adjacent to the Dolores river with steep mountain slopes on either side. Various trailheads exist along the highway and various forest roads intersect from the highway and provide additional trailhead access points. The east side of the planning area is the 'spine' of the La Plata mountains and the Colorado Trail (a non-motorized state-wide trail). The west side is bordered by private land or the Boggy-Glade travel management area. The north side includes a portion of the Lizard Head Wilderness.

The main river is the Dolores River. Tributary streams run through drainages on either side of the river and provide desirable habitat for many species of fish and wildlife.

The largest communities within the analysis area are Cortez, Dolores, Dove Creek, the Town of Rico, Telluride, and the unincorporated residential areas around Groundhog Mountain referred to as "Groundhog." Additionally, private inholdings exist along Hwy. 145 and also along the West Fork of the Dolores River on County Road 38, many of which feature cabins, ranches, and second homes of various sizes and values.

The analysis area offers outstanding recreational opportunities for people who live in flatter, warmer, and drier terrains but can quickly access the forest to enjoy higher ground, trails, rivers, streams, lakes, and scenic vistas. The heaviest recreation use occurs during fall hunting seasons, with moderate to high recreation use in summer months – mostly in the form of day trips on the trail system. Over-ground recreation use reduces substantially when deep snowfall closes the trails, usually by November. The analysis area contains four developed campgrounds, and dispersed camping alongside Forest roads is a popular activity.

The analysis area includes several Colorado Roadless Areas (CRAs) including Storm Peak, Ryman, Black Hawk Mountain, and portions of San Miguel and Hermosa.

1.1.2 How Roads and Trails are Described

1.1.2.1 Road Definitions

National Forest System Roads (NSFRs) are described both in terms of how they will be designated for motor vehicle use and by maintenance level (ML). Motor vehicle designation describes the classes of motor vehicles that may be used on the road. Vehicle classes can include licensed vehicles (typically cars, trucks, sport utility vehicles, or licensed motorcycles) or unlicensed vehicles (typically ATVs, UTVs and some motorcycles). Maintenance levels define a level of service that is provided by and the maintenance criteria required for, a specific road. Maintenance levels are assigned based on a set of criteria which include considerations for safety, resource protection, season of use, user comfort, travel speed, traffic volume and type, and surface type.

Designation definitions for roads are described below followed by the corresponding maintenance level.

Roads Open to All Motor Vehicles – These roads are open to all motor vehicles including smaller off-highway vehicles that may not be licensed for highway use. Motor vehicle classes assigned to these roads would include ATV, UTV², Motorcycle, as well as ‘full-size’ vehicles. The MVUM would display these roads as ‘Open to All Motor Vehicles’. For the RWD area, roads open to all motor vehicles include maintenance level 2, 3 and 4.

ML2 - Assigned to roads that provide for use by high-clearance vehicles. Roads in this maintenance level are low speed, single lane, and native surface. Maintenance consists of maintaining the road prism for passage of high-clearance vehicles, maintaining drainage facilities, removing/repairing slides and slumps, brushing, and installing/repairing gates. The target maintenance frequency cycle for ML2 roads is once every five years.

ML3 – Assigned to roads maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities, however, warning signs and traffic control devices are provided to alert motorists of situations that may violate expectations. These roads are typically surfaced with aggregate but can be native surface. A combination of drainage dips and culverts provide drainage but potholing or washboarding may occur. These roads are subject to the requirements of the Highway Safety Act. Maintenance is conducted annually.

ML4 - Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated.

Roads Not Designated – These roads are not designated and would not display on the Motor Vehicle Use map. They include stored roads and roads designated for administrative use only. In some cases an OHV trail designation may occur on an ML1 road. When this dual designation occurs, motor vehicle trail designations would apply (trail designations are described below). Maintenance Levels for these roads include ML1, and ML2-Admin.

- **ML1** - These are roads that are placed in storage for more than 1 year between intermittent uses and may be of any type, class, or construction standard. Basic custodial maintenance is

² All-Terrain Vehicle (ATV) holds one rider while a Utility-Terrain Vehicle (UTV) holds two passengers side-by-side.

performed. Typically no maintenance other than a condition survey may be required so long as no potential exists for resource damage.

- **ML2 Admin** – These roads are used within 1-year or less for specific purposes such as access to utility or administrative sites. Administrative roads will be system roads that are closed to the general public but are still operational for agency, or documented authorized uses. In the RWD area most Admin-only roads are ML2 but they can be any maintenance level.

1.1.2.2 Trail Definitions

Trails are described in two ways 1) motor vehicle designation and 2) managed uses and designed use. Motor vehicle designation describes the classes of motor vehicles that may be used on the trail. Vehicle classes for trails include motorcycles, ATVs and UTVs. Managed uses and designed use are used to develop trail design parameters for maintenance.

The types of motor vehicle designations to be applied to trails are described below. These labels would appear on the MVUM.

Trails Open to Wheeled Motor Vehicles 50-inches or less – These trails would include use by motorcycles and also by ATVs that meet the width requirement.

Special Vehicle Designation - For this analysis, the Special Vehicle Designation will be used for proposals that include trails open to UTVs. A 62-inch width limit would be applied that would provide for use by motorcycles, ATVs and also UTVs that meet the width requirement.

Trails open to motorcycles only (sidecars are not permitted) – The only type of motor vehicle that can be used under this designation would be motorcycles.

In the RWD area, motor vehicle trails are also managed for horse, hike and mountain bike. In other words shared use of these trails is anticipated.

During implementation, District recreation staff will apply the management intent identified through this analysis and decision and develop trail reconstruction or maintenance actions in keeping with the guidelines described in FSH2309.18 Chapter 20. Terms used in this NEPA document are,

Managed Use: Managed Use indicates management intent to accommodate a specific use. There can be more than one managed use per trail or trail segment. Managed Use is usually a small subset of all the allowed uses on the trail.

Designed Use Designed use is the Managed Use of the trail that requires the most demanding design, construction and maintenance parameters. There is only one Designed Use designated per trail or trail segment. Although only one designed use can be designated, other uses can be accommodated. For example, a trail where 'Motorcycle' is identified as the designed use, could also include vegetation clearing to accommodate pack and saddle.

The table below describes some of the Managed Use/Designed Use categories and characteristics. Additional information can be found in section 23.11 Exhibit 01 of FSH2309.18 Chapter 20. As stated in the handbook, designed use parameters are guidelines and can be adjusted.

Table 1-1 Examples of Trail Design for Different Designed Uses

Designed Use	Tread Width	Clearing Height/Width	Locally referred to as,
Hiker/Pedestrian	6" – 24"	6' – 8'/24" – 60"	single track trail
Pack and Saddle	12"-24"	8'-10'/72" - 96"	single-track trail
Bicycle	6" – 36"	6'-8'/24" – 72"	single track trail
Motorcycle	8" – 36"	6' – 8'/36" – 60"	single track trail
All Terrain Vehicle (ATV)	48"-60"	6'-8'/60"-72"	OHV trail or ATV trail

1.1.2.3 Other Terminology

Three other terms are used in this document.

- **Decommissioned** roads will be removed from the roads system and require an implementation program that is progressive in nature ranging from signing to re-contouring, ripping, seeding and placing physical barriers (see the Implementation Tree in the Design Features of Appendix B)
- **Converted** roads will be removed from the forest roads system and the segment will be re-purposed to meet the needs of other program areas. For example a road prism may not be needed for full size vehicle use but to provide recreational connectivity the road prism could be used as a trail.

1.2 EXISTING CONDITION

1.2.1 Trails

A recreation trail system has existed in the RWD analysis area for decades. Maps dating back to 1971 show motor vehicle use of trails including use by motorcycles on 'single-track' trails.

Seven miles of trail are designated as Trails Open to Wheeled Motor Vehicles 50-Inches or Less, and 114 miles are designated Motorcycle Only. Managed uses on these trails includes Pack and Saddle, Motorcycle, Mountain Bike and Hiker/Pedestrian.

The area also includes an additional 142 miles of trails not designated for motor vehicle use (nonmotorized trails).

1.2.2 Roads

Motor vehicles are used by the public to access the forest and engage in a wide variety of activities in the project area. Roads are also used by the Forest Service to accomplish forest management and administer authorized activities such as livestock grazing.

Currently 205.54 miles of National Forest System Road are designated Open to All Motor Vehicles. Of these, 108 are ML2, and 93 miles are ML3 and 4.5 miles are ML4. In addition, 169 miles of ML1 closed/stored roads exist on this landscape.

The current MVUM is posted online at <http://www.fs.usda.gov/main/sanjuan/maps-pubs>

Existing Conditions are further described by Sub-Area in Appendix C. These Sub-Areas are referenced, when helpful, throughout this DEIS.

Some areas contain unauthorized, or “user-created,” routes. In most cases, these roads appear as “two track” roads that access popular areas for dispersed recreation.

1.3 FOREST PLAN DIRECTION

This Draft Environmental Impact Statement (DEIS) is tiered to the Final Environmental Impact Statement (FEIS) for the *San Juan National Forest Land and Resource Management Plan* (Forest Plan) located at <http://www.fs.usda.gov/goto/sanjuan/planning>

Language in the new Forest Plan left the door open for site-specific project-level planning to clarify Forest Plan direction for the Rico-West Dolores area³. The Forest Plan mapped a “status quo” for the Rico-West Dolores area for overground travel suitability. The Forest Service anticipates amending the Forest Plan for the *Over-Ground Travel Suitability and OHV Area Designations Map* and the *Summer Recreation Opportunity Spectrum Map*.

The Forest Plan describes Desired Conditions (goals) and Objectives for the San Juan National Forest, including the RWD area. The Forest Plan excerpts below are examples of Desired Conditions for roads and trails in the RWD area:

3.2.1 Public lands continue to function as “working lands.” Collaborative forest health and rangeland management practices reduce wildfire hazards, contribute to the viability of private ranch lands, and sustain ecosystem services (including watershed health and wildlife habitat). The local economy benefits from, and contributes to, sustainable resource management, as well as the preservation of open space (p.175)

2.13.1 The transportation system within the SJNF and TRFO planning area consists of roads, high-clearance or primitive roads, trails, and bridges that are fiscally sustainable and safe as appropriate for the designated use or desired user experience; they allow for the use of, and enjoyment by, the public, and they meet resource management objectives. Sufficient condition surveys and inspections are conducted to promote road safety and prioritize road maintenance expenditures. (p.99)

3.2.3 A variety of looped single- and two-track opportunities for motorized and mechanized recreation exist at a range of elevations, offering different levels of difficulty. Motorized and mechanized opportunities are balanced with opportunities for foot and horseback access to areas of relative quiet and solitude at a variety of elevations. Much of the primary access to

³ The Forest Plan states, “A number of travel landscapes on the SJNF have not undergone site-specific overground travel management planning prior to publication of this LRMP. For these landscapes, travel suitability as depicted on Figure 2.13.1 primarily reflects current management and is subject to change through a plan amendment based on site-specific analysis that will be completed through the travel management planning process. Travel management planning will be initiated in these areas after this LRMP is finalized, and in some cases is already underway” (page 98).

these areas is shared, based on mutual courtesy and on a strong stewardship ethic that is primarily self-enforced and maintained by individuals and user group (p.175).

2.13.3 SJNF and TRFO destination and loop trails exist for motorized and non-motorized recreation users. New trail development within the planning area focuses on the creation of loop opportunities and when feasible, using existing routes to do so, when such use does not compromise the intent and sustainability of the route. New routes within the planning area are designed with the goals of preserving settings, complementing the landscape, and providing the desired user outcomes/benefits (p.99).

2.13.12 Transportation system components on SJNF and TRFO lands are designed, constructed, and maintained to avoid encroaching onto streams and/or onto riparian areas and wetland ecosystems in ways that impact channel fluctuation or channel geometry (the relationships between channel discharge and channel cross-sectional factors, such as area, width, and depth). Sediment delivery from the transportation system does not measurably impact pool frequency, pool habitat, and/or spawning habitats. (p.100).

1.4 DESIRED CONDITION

In addition to the desired conditions listed in the Forest Plan, this project seeks to designate a system of roads and motorized trails that are managed, sustainable, and consistent with the Forest Plan and the 2005 Travel Management Rule.

Specifically, considerations for improving the road and trail system for motor vehicle use includes,

- Improving riparian vegetation, water quality, wildlife and fish habitat and maintain healthy watersheds. Specifically maintaining or improving the health of high elevation fens
- Reducing motor vehicle impacts on the Town of Rico from National Forest recreation access routes
- Providing quality recreation opportunities for ATV, UTV and motorcycle trail riding in a natural forest setting.
- Responding to recent increases in summertime UTV riding near the Groundhog area.
- Balancing desired recreation experiences in the Bear Creek drainage and other areas where nonmotorized settings are requested
- Maintaining blocks of habitat for wildlife security
- Reducing impacts to livestock distribution especially where topography requires herding or where natural vegetation barriers are used instead of fences.
- Reducing road maintenance needs to bring them more in line with available resources
- Primary access on trails in the RWD area continues to be shared

1.5 OTHER MANAGEMENT DIRECTION

The following paragraphs describe past and current management direction for the RWD area:

1.5.1.1 Travel Management Rule (2005)

The Travel Management Rule requires the Forest Service to designate a system of roads, trails, and areas for motorized use by vehicle class and, if appropriate, by time of year.

1.5.1.2 Travel Analysis Process (TAP) Report for the Dolores District (2015)

This report includes a risk/benefit spreadsheet for Forest roads on the Dolores District and a recommended minimum road system map. The TAP report is not a decision but, rather, informs this and other travel management plans.

1.5.1.3 Colorado Roadless Rule (2012)

The culmination of a National Environmental Policy Act (NEPA) process involving all U.S. Forest Service inventoried roadless areas within the state of Colorado. The resulting Colorado Roadless Rule prescribes new management criteria for these areas and changed the boundaries of some roadless area units.

1.5.1.4 Calico Trail Establishment Report (USFS 1979)

In 1979 this report established the northern 6 miles of Calico Trail as a National Recreation Trail. It lists motorcycle riding and other uses as recreational values of the Trail. Throughout this document this trail is referred to as Calico NRT.

1.5.1.5 Other Direction

Other Direction includes the following,

- Executive Order 11644 (As Amended by EO 11989)
- FSM 7700 – Travel Management
- FSM 7710 – Travel Planning
- FSH 7709.55 – Transportation Planning Handbook
- FSH 7709.55, Chapter 10- Travel Planning and Designation
- FSH 7709.55, Chapter 20 – Travel Analysis
- FSM 2350 – Trail, River, And Similar Recreation Opportunities
- FSH 2309.18 – Trails Management Handbook
- FSH 1909.15 – NEPA Handbook

1.6 PURPOSE AND NEED

The purpose of, and need for, the Proposed Action is to manage over-ground wheeled motorized vehicle use in accordance with the requirements of the Travel Management Rule (36 CFR 212). This Rule requires the Forest Service to designate a system of roads, trails, and areas for motorized use by vehicle class and, if appropriate, by time of year. The Travel Management Rule at 36CFR212.55 also lists criteria for the designation of roads, trails, and areas as follows:

(a) General criteria for designation of National Forest System roads, National Forest System trails, and areas on National Forest System lands. In designating National Forest System roads, National Forest

System trails, and areas on National Forest System lands for motor vehicle use, the responsible official shall consider effects on National Forest System natural and cultural resources, public safety, provision of recreational opportunities, access needs, conflicts among uses of National Forest System; the need for maintenance and administration of roads, trails, and areas that would arise if the uses under consideration are designated; and the availability of resources for that maintenance and administration.

(b) Specific criteria for designation of trails and areas. In addition to the criteria in paragraph (a) of this section, in designating National Forest System trails and areas on National Forest System lands, the responsible official shall consider effects on the following, with the objective of minimizing: (1) Damage to soil, watershed, vegetation, and other forest resources; (2) Harassment of wildlife and significant disruption of wildlife habitats; (3) Conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring federal lands; and (4) Conflicts among different classes of motor vehicle uses of National Forest System lands or neighboring federal lands. In addition, the responsible official shall consider: (5) Compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.

The purpose of this action is to balance the current and future recreational desires of the public with Forest Service responsibilities for wildlife and fisheries management, water resources management, and forest management as well as the desires of local communities and affected private landowners. More specifically, this action is needed in order to develop a sustainable system of trails and roads where motorized travel is appropriate. It will strive to improve both the motorized and nonmotorized user's experience.

1.7 DECISION FRAMEWORK

The decision to be made at the end of this planning effort is to identify the road and trail system open to the general public for over-ground, wheeled, motor vehicle travel. This decision will identify a system of roads and trails designated for motor vehicle use by class of vehicle and time of year. The decision also includes whether or not to include motor vehicle areas (open to cross-country travel). The planning process will result in the verification or revision of the 2014 Motor Vehicle Use Map that displays the designated system of roads and trails for motorized travel. Designations for tracked vehicles will not be made as part of this decision and are therefore not allowed.

This decision may also include which, if any, authorized National Forest System roads currently open should be closed to motorized travel, converted to another use such as a trail, closed to all but administrative use, or taken off of the road system and decommissioned. In addition, this decision may include which, if any, authorized roads currently closed should be open to motorized travel. This decision will also determine which, if any, unauthorized routes should be added to National Forest System as trails or roads open for motorized access.

This decision may also include which, if any, authorized National Forest System trails currently open should be closed to motorized travel, or taken off of the trail system and decommissioned. For trails currently open to motorized travel or proposed to add motorized travel as managed use, the corresponding design parameters listed in FSH2309.18 would be applied during implementation of the decision. This decision will determine whether or not to reconstruct, re-align or install trail developments necessary to address resource impacts.

Furthermore, this decision will determine how far motor vehicles may be driven off designated roads for the sole purpose of motorized dispersed camping. The decision will determine whether or not to amend the Forest Plan Overground Motor Vehicle Suitability Map and the Recreation Opportunity Spectrum Map.

This project will not apply to Hwy. 145 itself, which is managed by the State of Colorado. Nor does it apply to the 22 miles of County Route 38 (the West Dolores Road) between the county line and the intersection of NFSR611. Previously, the Forest Service granted an easement to Dolores County for this section, so management decisions reside with Dolores County.

This project will not apply to other authorizations for use of roads or trails. Where roads or trails are identified as 'Administrative-Only' the type of authorization for use will not be described.

1.8 RESPONSIBLE OFFICIAL AND LEAD AGENCY

The USDA Forest Service is the lead agency for this proposal. District Ranger Derek Padilla is the official responsible for project decisions, while Forest Supervisor Kara Chadwick is responsible for any Forest Plan amendments.

1.9 PUBLIC INVOLVEMENT

1.9.1 Scoping

According to the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40CFR1500-1508), "There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a Proposed Action....As part of the scoping process the lead agency shall...determine the scope and the significant issues to be analyzed in depth... [and] identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review ..." (40CFR1501.7).

The Forest Service developed an initial Proposed Action document and maps as a starting point for the NEPA process. The Purpose and Need statements above were applied to the RWD landscape, resulting in a set of proposals that included, 1) making minor adjustments to main graveled roads, 2) converting some native surface roads to trails, 3) setting distance limits for parking for dispersed camping, 4) changing the type of uses allowed on some trails, 5) adopting new timing restrictions on motorcycle use of trails, 6) realigning trails at certain locations, 7) adding more ATV/UTV trails to the system and 8) amending the Forest Plan to update the Forest Plan Overground Travel Suitability and Recreation Opportunity Spectrum Maps.

The Proposed Action published in December 2014 is located online at

<http://www.fs.usda.gov/project/?project=44918>

Public comments for the RWD Roads and Trails (Travel Management) Project were received during a scoping period that occurred between December 12, 2014 and January 30, 2015. Input was solicited through media releases; articles in local newspapers; letters and e-mails to those who had previously expressed interest in the project; and letters to private landowners in the RWD area. The Forest Service also conducted a public open house at the Dolores Community Center on January 15, 2015.

All comments were entered into the project file and read by the District Ranger. Preliminary concerns raised in the comment letters are described in the Revised Scoping Report (Project File). Of the preliminary concerns evaluated, several issues are listed for in-depth analysis and discussion in this DEIS. In addition to the Issues below, this draft environmental impact statement (DEIS) will describe the effects of the alternatives on various aspects of the environment, including vegetation, water quality, safety, cultural resources, air quality, and wildlife habitat for species other than elk. These topics are required by various laws established for the protection of the environment.

1.10 ISSUES

Issues serve to highlight effects or unintended consequences that may occur from the proposed action and alternatives, giving opportunities during the analysis to reduce the adverse effects and compare trade-offs for the decision maker and public to understand. Issues help set the scope of the actions, alternatives, and effects to consider in our analysis (FSH 1909.15, sec. 12.4).

The responsible official, Derek Padilla, Dolores District Ranger, approved the list of issues on XXXX, in compliance with FSH 1909.15, Section 12.32.

Concerns that were not carried forward as issues for this analysis are listed in the Revised Scoping Report (Project File).

1.10.1.1 Loss or Reduction of Motorized Recreation Opportunities

There is concern that quality opportunities for motorized recreation were not fully considered in the proposed action, these concerns included

- Connections between Taylor and Stoner Mesa
- ATV/UTV opportunities on Black Mesa for summer recreation and scouting game with an OHV
- Number of miles of road riding necessary to make connections
- Loss of riding loops in vicinity of Winter trail
- Lack of quick access from the Calico ridgeline to Hwy 145 for mechanical problems or bad weather.

There is concern that proposed seasonal restrictions reduce motorcycle riding opportunity especially because

- motorcyclists often spend time clearing trails at the beginning of the season
- lower elevations provide riding opportunities earlier than the higher elevations
- fall is a scenic time of year with aspen colors and dry days

There is concern that regionally across the SJNF, motorized recreation opportunity is less than year's past

1.10.1.2 Economic Impacts to Local Communities

There is concern motorcycle riders or hunters may stop visiting the Town of Rico if road and trail management changes are applied and this in turn could affect local businesses.

1.10.1.3 Lack of Semiprimitive Nonmotorized Recreation Trail Experiences

There is a concern that nonmotorized recreation experiences were not fully considered in the proposed action, these concerns included,

- lack of access to natural forest settings where motor vehicle sound is absent.
- requests for nonmotorized settings in the Bear Creek drainage for anglers, guided pack trips, day hiking from Hwy 145 and backpacking.
- Requests for nonmotorized settings in the Calico and East Fork areas.
- concerns for limited wildlife viewing

Concern that nonmotorized trails for hiking, mountain biking and horse riding and without motorcycle noise are under-represented regionally on the Dolores District

Concern that motor vehicle sounds may conflict with the enjoyment of nonmotorized recreation experiences

1.10.1.4 Environmental Impacts

There is concern that motorized use designations being proposed could cause environmental impacts including,

- possible impacts to elk habitat effectiveness from motor vehicle noise disturbance
- riparian areas at the headwaters of Fish Creek and Willow Creek may be impacted by illegal cross-country ATV or UTV driving
- high elevation fens may be impacted by the physical location of certain roads and trails (regardless of use).
- Potential barriers to sensitive species fish passage
- Sedimentation from roads or trails may occur in sensitive fish species habitat in four creeks
- Possible impacts to sensitive plant species habitat in alpine areas
- Potential spread of weeds along proposed new trails.

1.10.1.5 Impacts to Livestock Operations

There is a concern that motorized use designations being proposed could impact livestock distribution where livestock distribution depends on herding between drainages and natural barriers for livestock distribution. Concerns include proposed pathways between pastures on the Taylor Mesa allotment, and proposed motorized use of trails on the Tenderfoot Allotment.

1.10.1.6 Maintenance Feasibility for Roads and Trails

There is concern that the system of roads and trails proposed cannot be adequately maintained which would lead to resource impacts. Specific challenges for this area include

- Trail developments or increased maintenance frequency to address wetland impacts or drainage issues
- Areas where soils erode easily or have low bearing strength are susceptible to unexpected maintenance requests to fix slumps or slides on roads or trails
- Longer (less desirable) maintenance intervals on native surface roads

1.10.1.7 Other Considerations Defined in 36CFR212

36CFR212 (Travel Rule) identifies criteria to be considered when designating roads, trails or areas for motor vehicle use. Topics not already identified in the list above, include

- The availability of resources for road and trail maintenance and administration.
- Conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring federal lands; and
- Conflicts among different classes of motor vehicle uses of National Forest System lands or neighboring federal lands.
- Compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors

2 ALTERNATIVES

This chapter explains how the ID Team developed the Alternatives it carried forward for detailed analysis, followed by a detailed description of each alternative. Appendix B lists the specific Design Features that would apply under the different Alternatives.

This chapter also lists the alternatives that were eliminated from detailed study and explains why they were considered initially but not analyzed further.

2.1 HOW THE ALTERNATIVES WERE DEVELOPED

Five Alternatives were developed for detailed consideration. Later in this chapter, these five Alternatives are described in detail; this section describes how they were developed. It begins with Alternative B because Alternative A is the existing management scenario.

2.1.1 Step 1 - Refine the Proposed Action

The original Proposed Action addressed to some extent issues related to semiprimitive, nonmotorized recreation; elk habitat effectiveness; wetland impacts; and maintenance feasibility. The road system was reduced or altered in the original Proposed Action. The original Proposed Action enhanced riding opportunities for ATVs and UTVs by adding additional trails and by expanding their width to 62 inches. The original Proposed Action expanded the semiprimitive, nonmotorized setting areas to include the slopes west of Rico, the lower third of the Bear Creek drainage, and lands between County Road 38 (the West Dolores Road) and NFSR471. It took steps to address elk habitat effectiveness through springtime restrictions on motorcycle riding. It addressed livestock distribution issues and trail maintenance concerns by proposing to close Wildcat Trail to motorcycle use. Finally, the Proposed Action addressed both wetlands and maintenance feasibility on Ryman Creek Trail by eliminating motorcycle use entirely and decommissioning a section of the Trail in order to prohibit all types of use.

The Proposed Action did not adequately address the expected resource impacts or provide enough recreation opportunity for some types of users. Moreover, additional field review during the summer of 2015 uncovered a need to revise some aspects of the Proposed Action especially related to wetland impacts. Adjustments included addressing wetland impacts by placing physical barriers at the headwaters of Fish Creek; and implementing new proposals for the Spring Creek area and the northern 4 miles of Calico NRT. Further review of timing restrictions resulted in adding restrictions to trails for ATV and UTV riding similar to motorcycle restrictions in the spring. Other refinements to the Proposed Action included removing OHV trail designations on NFSR496 and 422A, keeping NFSR358 open, and closing NFSR208 due to road conditions and evidence of dispersed camping. The north terminus of NFSR149 was closed, and additional options were also developed for NFSR528B and B1 in the Bolam Pass/Tin Can Basin area to address wetland impacts. After further discussion about trends in elk habitat, Adaptive Management Actions were added.

Ultimately, the ID Team decided not to carry forward most of the proposals in the original Proposed Action for new nonmotorized trails in order to keep the focus of analysis on motor vehicle roads and

trails. A few nonmotorized trails were carried forward in the analysis because they were directly tied to changes in motor vehicle use, or they are currently on-the-ground and managed for nonmotorized use.

The adjusted Proposed Action was carried forward as *Alternative B (Proposed Action)*. The proposed action is not synonymous with preferred alternative.

A preferred alternative has not been identified for this DEIS.

2.1.2 Step 2 - Add Design Features Common to All Alternatives

Next, the ID Team added or adjusted project Design Features that would apply to Alternative B and to any other alternative selected. The Design Features are implementation tasks that would be taken regardless of which alternative is selected. Design Features address wetland impacts, livestock distribution and maintenance feasibility.

2.1.3 Step 3 - Develop Additional Alternatives

Alternative C: Alternative C responds especially to concerns regarding motorcycle loops, connections, and season of use. For example, it would return certain trails back to the motorcycle riding trail system that the Proposed Action made off-limits. Alternative C strikes a balance between concerns about motorcycle traffic on streets in the town of Rico with the need for motorcyclists to have access to town businesses for fuel, food, or lodging. This would be accomplished by adding a trail that would connect the Burnett road to Hwy. 145. Alternative C would also add a connection from Spring Creek Trail to NFSR692, with fencing to discourage livestock movement along the new trail. Alternative C proposes to add motorcycle use to the Tenderfoot Trail. This alternative, however, would not restore all the single-track riding connections taken away in the Proposed Action, since motorcycle use would be eliminated from Ryman, Wildcat, and Winter Trails, as well as the lower third of Bear Creek Trail.

In order to address an option that would maintain a connection through the Bear Creek drainage so as to provide a connection from Haycamp Mesa to the Rico West Dolores area, Alternative C allows motorcycle use on Gold Run and Grindstone trails, but not the Little Bear trail. Keeping the Little Bear trail closed to motorcycles does not completely fit the theme of this alternative but it does allow this Alternative to blend demands for nonmotorized settings in Bear Creek with maintenance of motorcycle connections.

Alternative C would also respond concerns about trail clearing and riding opportunity restricted under the Proposed Action. Under Alternative C, motorcycle riding could begin on June 1, one month earlier than was proposed in Alternative B. Alternative C would also allow motorcycle riding until October 30 (compared to September 8, as proposed in Alternative B).

Concerns about ATV and UTV riding opportunities in the Black Mesa area are addressed by proposing two OHV loops in this area.

Road system changes described in Alternative B hold constant across the other alternatives. No additional opportunities to address maintenance feasibility were identified beyond those already proposed in Alternative B.

Alternative D: Alternative D responds to concerns identified in the Bear Creek drainage. This Alternative is much the same as Alternative C, except that motorcycle riding would be prohibited in the Bear Creek drainage entirely (Bear Creek, Gold Run, Grindstone, and Little Bear Trails). Beyond the Bear Creek

drainage, Alternative D would offer the same motorcycle riding opportunities that are described in Alternative C. Riding opportunities of ATVs and UTVs are the same as Alternative B. Timing restrictions for trails designated to include motorcycle, ATV or UTV vehicle use is the same as Alternative C.

Alternative E: Alternative E responds to requests for more Semiprimitive Nonmotorized Recreation trail experiences, focusing on the Bear Creek drainage, on the northern Calico Trail system, and in the East Fork area. Motorcycle trail riding would be limited to the Eagle Peak, Taylor and Stoner Mesa areas. Trails would be similar to Alternative C in those areas and includes the Burnett to Galloping Goose connector and the Spring Creek to FR692 connector. This alternative expands areas of Semiprimitive Nonmotorized recreation settings and decreases Semiprimitive Motorized areas.

2.2 ALTERNATIVES CONSIDERED IN DETAIL

The following alternatives are considered in detail.

Alternative A (No Action) – The No Action Alternative proposes to continue the current motor vehicle designations of roads and trails. The types of managed uses for trails would not change. Maintenance Levels for roads would not change. This alternative has no timing restrictions on motor vehicle use.

Alternative B (Proposed Action) – Alternative B would result in minor changes to the road system, and would remove motorcycle use from some trails to address resource impacts, livestock distribution concerns and balance requests for nonmotorized areas. The strictest timing restrictions are applied to motor vehicle trail riding compared to the other alternatives. New 62-inch trails are added for ATV/UTV riding.

Alternative C – This Alternative would re-establish motorcycle use on some, but not all, of the trails that would be closed to motorcycle use under Alternative B. It proposes new motorcycle trails in order to create connections and adds 62-inch trails in the Black Mesa area. Timing restrictions of motor vehicle use on trails would be less restrictive under this Alternative than they would be under Alternative B.

Alternative D – This Alternative focuses on the Bear Creek drainage by removing motorcycle use on trails within the drainage. Outside of Bear Creek, Alternative D is the same as Alternative C. Timing restrictions would be the same as those proposed under Alternative C.

Alternative E – This Alternative is the same as D for the Bear Creek drainage. In addition, other trails are managed for nonmotorized uses and semiprimitive nonmotorized settings including the North Calico NRT and connecting trails, and the East Fork area. Motorcycle riding would be focused on areas from Eagle Peak trail south to Taylor Mesa. Timing restrictions would be the same as those under Alternative C.

2.2.1 Actions Common to All Alternatives

1. Design Features described in Appendix B would be implemented.
2. All alternatives propose to designate a system of roads and motorized trails, in addition to prohibiting motorized cross-country travel, except in fixed-distance corridors solely for the purpose of parking for dispersed camping.
3. Once an alternative is selected, roads and trails will be displayed on a Motor Vehicle Use Map (MVUM). The MVUM displays the motor vehicle designation for roads and trails according to

vehicle class. Over-ground wheeled motor vehicles will be restricted to the routes shown on the MVUM. Designations for tracked vehicles are not addressed in this analysis and therefore are prohibited.

4. Each road or trail will be assigned a system number to be displayed on the MVUM and on signs posted on the ground. It is the responsibility of the motor vehicle driver to follow the Motor Vehicle Use Map. Other maps such as topo maps and Forest Visitor Maps may aid in determining on-the-ground locations.
5. The travel management rule employs an iterative, ongoing process that begins with an analysis of the transportation system, which is then carried into a NEPA analysis for proposed changes to the system of roads, trails, and areas. This results in the designated transportation system, which can be adapted over time. The motor vehicle use map will show this system and will be valid until the forest issues a new map based on system changes found to be necessary. The final rule states that this map will be reissued every year, which would be reflective of any changes made to the designated system.
6. In most cases, allow vehicle parking for dispersed camping within 300 feet of designated Forest roads and motorized trails. However, prohibit overnight vehicle parking at all trailheads except Johnny Bull, Kilpacker, and Ryman Creek Trailheads. In addition, close fen areas to parking for dispersed camping per design features in Appendix B.
7. Design and designate all OHV (ATV/UTV) trails to accommodate UTVs up to 62 inches wide.
8. Manage all ML1 roads as stored roads not designated for motor vehicle use, except where such roads are also designated as trails and where trail designations would apply. Trails with this dual designation may be temporarily closed to trail use for timber sales or other projects that require use of the stored road.
9. Continue actions identified in the Engineering Reports for Mixed Use Designation to accommodate a mix of licensed and non-licensed vehicles on ML3 roads (see Design Features in Appendix B).

2.2.2 Alternatives

The tables below show road and trail changes across the RWD area. To view the Alternatives area-wide see the Alternative maps in Appendix A. There are two road maps, Roads Focus ML 2, 3, 4 and Roads Focus ML1. Different colors on the road maps in Appendix A display proposed changes. Proposals for road designations are the same across the action alternatives. There are five 'Trails Focus' maps, one for each alternative. The orange highlighted trails designated for motorcycle use are different across the five maps.

2.2.2.1 Proposed Motor Vehicle Use on Trails by Alternative

Table 2-2 below displays miles of trails designated for motor vehicle use by Alternative. The Designed Use for trails that include motorcycle riding would most likely be identified as 'Motorcycle' described in FSH2309.18 Chapter 20. However, design parameters for other managed uses would also be included, such as the vegetation clearing limits described for 'Pack and Saddle'.

Of the trails proposed with motorcycle as a managed use, only three trails do not have motorcycle use currently. These include,

- Tenderfoot Trail (644)– Alternative C only – 3.78 miles

- Loading Pen Trail (738)– Alternatives C, D and E – 3.87 miles
- Spring Creek Trail⁴ (627)– Alternatives C, D and E – 1.5 mile portion of this trail

Common to all the action Alternatives, approximately 2 miles of trail would be decommissioned (re-vegetated and removed from the system entirely).

Table 2-1 Trails Proposed for Motor Vehicle Use by Alternative

Trail Designations	Alt. A (No Action)	Alt B (Proposed Action)	Alt C	Alt D	Alt E
Trails Open to Wheeled Motor Vehicles 50-inches or less	7	*	*	*	*
Special Designation Open to Wheeled Motor Vehicles 62-inches or less (miles of that include Willow Divide Rd designated as part of trail loop)	*	15 (27)	20 (32)	15 (27)	15 (27)
Motorcycle Only (Single Track trails to include Motorcycle Use and other nonmotorized uses)	114	84	100	88	65

The table below displays changes in managed uses by alternative and by trail name. Trails are lumped geographically. If motorcycle is removed as a managed use, these trails would continue to provide for other managed uses including Pack and Saddle, Mountain Bike and Hiker/Pedestrian. Changes from Current Designations are Underlined - Trails with no change are highlighted in grey.

Table 2-2 Proposed Trail Designations by Trail Name and Trail Number

Trail Name	Alt. A (No Action)	Alt. B (Proposed Action)	Alt. C	Alt. D	Alt E
Bear Creek (601), Grindstone (608), Gold Run (618), Little Bear (609), Rough Canyon (435)	Includes Motorcycle Use	All these trails includes motorcycles <u>except lower 1/3 of Bear Creek</u>	Gold Run and Grindstone includes motorcycle use with <u>section of Bear Creek between those trails. Little Bear and Lower 1/3 of Bear Creek does not include motorcycle use</u>	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>

⁴ Previous designations split this trail so only ½ was designated for motorcycle use. Therefore the trail is not currently managed for motorcycle use.

Trail Name	Alt. A (No Action)	Alt. B (Proposed Action)	Alt. C	Alt. D	Alt E
Priest Gulch (645), Calico South (211)	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use
Stoner (624), East Twin Springs (741) West Twin Springs (739)	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use
Eagle Peak (629)	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use
Johnny Bull (639), Calico North (208), and Portions of East and West Fall Creek (646 and 640) upslope from FR471	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use	<u>Does Not Include Motorcycle Use</u>
Winter (202) portions of East and West Fall trails (646 and 640) downslope from FR471	Includes Motorcycle Use	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>
Burnett Creek (601)	Includes Motorcycle Use	<u>Does Not Include Motorcycle Use</u>	<u>Includes Motorcycle Use with re-route around Town; Adds the new 4 mile galloping goose motorcycle trail</u>	<u>Includes Motorcycle Use with re-route around Town; Adds the new 4 mile galloping goose motorcycle trail</u>	<u>Includes Motorcycle Use with re-route around Town; Adds the new 4 mile galloping goose motorcycle trail</u>
New Trail from Burnett Road to new Rio Grande Southern trail	N/A	<u>Includes Motorcycle Use</u>	<u>Includes Motorcycle Use</u>	<u>Includes Motorcycle Use</u>	<u>Includes Motorcycle Use</u>
New Rio Grande Southern Trail to Montelores Bridge	N/A	<u>Includes Motorcycle Use</u>	<u>Includes Motorcycle Use</u>	<u>Includes Motorcycle Use</u>	<u>Includes Motorcycle Use</u>
Ryman Creek (735)	Includes Motorcycle Use	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>
East Fork (638)	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use	Includes Motorcycle Use	<u>Does Not Include Motorcycle Use</u>
New Extension from East Fork	N/A	<u>Includes Motorcycles</u>	<u>Includes Motorcycles</u>	<u>Includes Motorcycles</u>	<u>Does Not Include Motorcycles</u>

Trail Name	Alt. A (No Action)	Alt. B (Proposed Action)	Alt. C	Alt. D	Alt E
trail to Colorado Trail to FR578					
Spring Creek (627)	Currently ½ and ½	<u>Does Not Include Motorcycle Use</u>	<u>Includes Motorcycle Use for 1.5 miles to Pothole Rd new trail on Pothole road to 692 – no motorcycles on upper end of Spring Creek Trail</u>	<u>Includes Motorcycle Use for 1.5 miles to Pothole Rd new trail on Pothole road to 692 – no motorcycles on upper end of Spring Creek Trail</u>	<u>Includes Motorcycle Use for 1.5 miles to Pothole Rd new trail on Pothole road to 692 – no motorcycles on upper end of Spring Creek Trail</u>
Wildcat (207)	Currently ½ and ½	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>
Tenderfoot (644)	Does No Include Motorcycle Use	Does Not Include Motorcycle Use	<u>Includes Motorcycle Use</u>	Does Not Include Motorcycle Use	Does Not Include Motorcycle Use
Horse Creek (626)	Includes Motorcycle Use	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>	<u>Does Not Include Motorcycle Use</u>
Loading Pen (738)	Does Not include Motorcycle Use	Does Not include Motorcycle Use	<u>Includes Motorcycle Use</u>	<u>Includes Motorcycle Use</u>	<u>Includes Motorcycle Use</u>
Willow Divide OHV (619)	Includes Motorcycle and ATV use	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>
New Taylor OHV	N/A	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>
New Groundhog OHV	N/A	<u>Includes Motorcycle, ATV and UTV 62-inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>
New Lone Cone OHV	N/A	<u>Includes Motorcycle, ATV and UTV 62-inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>
New Black Mesa OHV loops	N/A	<u>N/A</u>	<u>Includes Motorcycle, ATV and UTV 62 inch or less</u>	<u>N/A</u>	<u>N/A</u>

2.2.2.2 Proposed Timing Restrictions for Motor Vehicle Use of Trails, by Alternative

Proposed timing restrictions are shown in the table below. Spring restrictions are proposed to further enhance/expand wildlife security and fall restrictions are proposed to reduce motor vehicle noise impacts in areas where hunters 'walk in' to hunt.

Table 2-3 Timing Restrictions by Alternative

Alt.	Motorcycle Use on Trails	OHV (ATV/UTV) Use on Trails
A (No Action)	None	None
B (Proposed Action)	Prohibited from 9/9 to 6/30 Allowed from 7/1 to 9/8	Prohibited from 12/1 to 6/30 Allowed from 7/1 to 11/30
C	Prohibited from 11/1 to 5/30 Allowed from 6/1 to 10/30	Prohibited 12/1 to 5/30 Allowed from 6/1 to 11/30 Except Black Mesa OHV loops are closed in the fall on 9/8.
D	Same as C	Prohibited from 12/1 to 5/30 Allowed from 6/1 to 11/30
E	Same as C	Same as D

Note: The District Ranger also has the authority to provide authorizations to individuals or partner groups for trail clearing.

2.2.2.3 Proposed Trail Construction, Reconstruction and Developments

The following table lists trail projects proposed under each Alternative. These actions are separate from, and in addition to, trail maintenance.

Table 2-4 Trail Developments by Alternative

Actions	Alt A (No Action)	Alt B (Proposed Action)	Alt C	Alt D	Alt E
Convert a section of the FR692A (Pothole road) to trail, and construct trail to connect to FR692. Install ½ mile of fence and a trail cattle guard. Reconstruct approximately 1.5 miles of the Spring Creek Trail to meet design parameters for motorcycle use.			X	X	X
At the intersection of 578 and 578B, close FR578B and B1 and convert these two roads to single track trail. Managed uses include pack and saddle, mountain bike, hiker pedestrian and motorcycle.		X	X	X	X
Establish Lone Cone OHV loop from existing ML1 and ML2 roads		X	X	X	X
Establish Taylor OHV loop from existing ML1 road		X	X	X	X
Establish Black Mesa OHV loop from existing ML1 and nonsystem			X		
Move Fish Creek Trailhead place boulders or other barriers to discourage use at headwaters of Fish Creek.		X	X	X	X

Actions	Alt A (No Action)	Alt B (Proposed Action)	Alt C	Alt D	Alt E
Identify appropriate boundaries for parking for dispersed camping at Lizardhead pass and set boulders to establish boundaries		X	X	X	X
Harden or reconstruct the Tenderfoot trail at stream crossings and reconstruct the upper section of the trail so that trail design provides for motorcycles as a managed use			X		
500 foot or less re-alignment, trail developments like boardwalks or turnpikes on northernmost four miles of Calico NRT			X		X
More extensive re-alignment (greater than 500 feet), plus similar or more trail developments on northernmost four miles of the Calico NRTI		X		X	
Construct a new trail from FR422 (Burnet Creek Road) south to connect to the Rio Grande Southern proposed alignment and down to the Montelores Bridge			X	X	X

2.2.2.4 Proposed Motor Vehicle Designations and Maintenance Levels by Alternative

Roads in the table below with a ML2 or ML3 would be designated Open to All Motor Vehicles. Roads with a ML1 or Administrative label would not be designated for motor vehicle use, and would not appear on the MVUM. Nonmotorized uses of roads are not affected by this project.

The action alternatives would 1) decommission 7.28 miles of road previously designated open to public use, 2) decommission 39.8 miles of ML1 closed/stored roads and 3) convert 5.32 miles of road to trail.

Table 2-5 Road Maintenance Level Changes by Alternative

Maintenance Level and Motor Vehicle Designation	Alt A (No Action)	Alts B, C, D and E	Remarks
Miles of ML 2 Roads (Open to All Motor Vehicles)	108.32	99	Add 1.99 miles from ML1 Add 4.41 miles from ML3, Add .78 miles from unauthorized, Subtract 6.66 miles decommissioned, Subtract 1.55 miles changed to ML2-Admin, Subtract 4.87 miles converted trail, Subtract 3.39 change to ML1
Miles of ML 3 Roads (Open to All Motor Vehicles)	92.74	91.89	Add 4.5 miles from ML4, Add .013 from unauthorized, Subtract 0.62 miles decommission, Subtract 0.45 miles convert trail, Subtract 4.41 miles changed to ML2

Maintenance Level and Motor Vehicle Designation	Alt A (No Action)	Alts B, C, D and E	Remarks
Miles of Maintenance Level 4 Roads (Open to All Motor Vehicles)	4.5	0	Subtract 4.5 miles changed to ML3
Miles of Administrative Roads (Not Designated for Motor Vehicle Use)	0	7.53	Add 5.65 miles from ML1, Add 1.55 miles from ML2 Add .33 miles from unauthorized
Miles of ML 1 Roads** (Not designated for motor vehicle use)	169.16	125.5	Add 3.39 miles from ML2, Add 0.49 miles from unauthorized, Subtract 39.8 miles decommission, Subtract 5.65 miles change to ML2-Admin Subtract 1.99 miles change to ML2
Total National Forest System Road Miles	374.72	323.92	
Total Road Miles Designated Open for All Motor Vehicles (public use)	205.54	198.42	
**ML 1 roads that also serve as 62-inch trails while they are in storage are listed as ML1 in the roads table. Roads Converted to OHV or single track trail would no longer serve as roads for any purpose and are removed from the road system			

2.2.2.5 Proposed Dual Designations

The following roads would be designated as ML1 roads but also designated as Special Designation Open to Wheeled Motor Vehicles 62 inches or less.

Table 2-6 Proposed Dual Designations by Alternative

Road Number	ML	Special Designation 62-inch Trail Name	Alternative
611A2	ML1	Black Mesa OHV	Alt C
611A4	ML1	Black Mesa OHV	Alt C
FR727E	ML1	Willow Divide OHV	Alt's B, C, D and E
FR202	ML1	Taylor OHV	Alt's B, C, D and E

2.2.2.6 Proposed New Turn-Arounds on Roads by Alternative

The table below identifies locations where new turn-arounds would be constructed.

Table 2-7 Proposed Road Turn-Arounds by Alternative

Road	Location	Alternative
FR547	At new terminus need a turnaround that can accommodate a horse trailer	Alternatives B, C, D and E
FR404	Turnaround at the new terminus of FR404 where Fish Creek trail will start.	Alternatives B, C, D and E
FR423	Turnaround at the new location between private land parcels	Alternatives B, C, D and E

2.2.2.7 Proposed Changes to the Forest Plan 'Recreation Opportunity Spectrum' Map

The table below displays changes in acreages of Recreation Opportunity Spectrum (ROS) settings for the RWD project area. These changes would be included as an amendment to the San Juan Forest Plan that would only apply to the RWD area. Roads and trails affected by this project fall primarily within the Semiprimitive settings. In semiprimitive settings sounds are primarily natural. In semiprimitive motorized settings intermittent sounds from motor vehicles can be expected. In the semiprimitive nonmotorized settings sounds from motor vehicles would not be expected. Additional information and maps are displayed in Chapter 3.

Table 2-8 Acres of Recreation Setting by Alternative

Recreation Opportunity Setting (ROS)	Alt A (No Action)	Alt B (Proposed Action)	Alt C	Alt D	Alt E
Wilderness Primitive (WP)	21,047	21,047	21,047	21,047	21,047
Primitive (P)	2,627	2,627	2,627	2,627	2,627
Semiprimitive Motorized (SPM)	120,360	141,578	141,771	137,348	123,513
Semiprimitive Nonmotorized (SPNM)	76,277	65,455	65,263	69,685	83,520
Roaded Natural (RN)*	23,332	14,612	14,612	14,612	20,765
Rural (R)	1,676	0	0	0	0

Some areas with ML1 roads were inappropriately identified as Roaded Natural or Rural Settings in the Forest Plan map. These roads are stored and not used on a regular basis so a SPM setting was applied to these polygons.

2.2.2.1 Proposed Changes to the Forest Plan 'Over-Ground Travel Suitability and OHV Area Designations' Map

The table below displays changes in acreages by alternative for the Forest Plan Over-Ground Travel Suitability and OHV Area categories. These changes would be included as an amendment to the San Juan Forest Plan that would only apply to the RWD area. Unsuitable areas are generally not conducive to road or motorized trail system development. Suitable areas would not generally be considered for net overall expansion of the transportation system. Suitable Opportunity areas are those that have an existing road and/or motorized trail system, and where there is potential to improve the system by adding roads or trails.

Table 2-9 Acreages of Over-Ground Suitability Categories by Alternative

Category	Alt A (No Action)	Alt B (Proposed Action)	Alt C	Alt D	Alt E
Unsuitable - Wilderness	21047	21069	21069	21069	21069
Unsuitable	49445	76320	76320	76320	76320
Suitable	155240	147907	148099	143676	129841
Suitable Opportunity	19559	0	0	0	0

2.2.3 Specific Alternative Descriptions

The following Alternative Descriptions refer to the Sub-Areas described in Appendix C.

Road mileages are described by road segment and not broken down by subarea. For example, if the a portion of road falls within subarea 1 and a portion of the road falls in subarea 2 the road is only listed once and usually within subarea that contains the majority of the road.

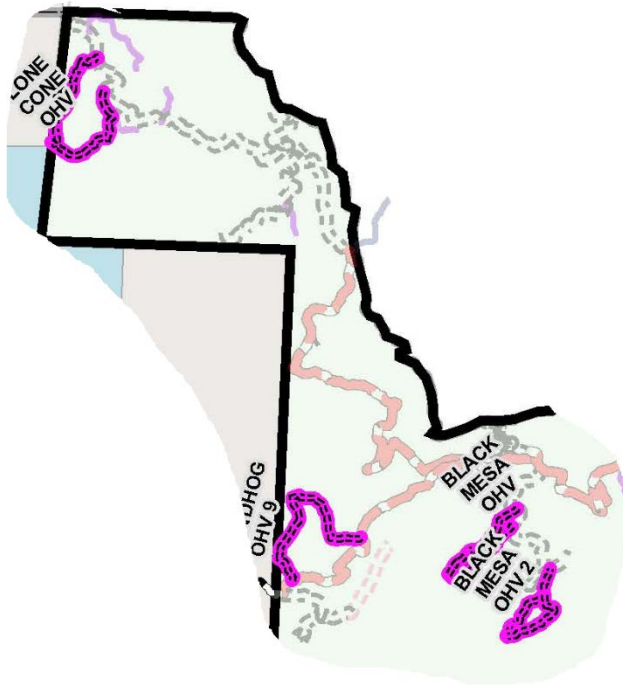
2.2.3.1 Sub-Area 1 – Lone Cone, Groundhog Point, Fish Creek, and Willow Divide Area

This subarea is located in the northwest portion of the analysis area.

Trail Actions - Alternatives B, C, D, and E:

1. Take additional measures (e.g., install boulders, fences, or signs) at the headwaters of Fish Creek and Willow Creek. Discourage off-road riding in the upper Fish Creek area and promote wetland habitat, willows, beaver, etc.
2. Move the Fish Creek Trailhead north to a new terminus on NFSR404 (see roads list below).
3. Decommission unauthorized ATV/UTV created routes south of the new Fish Creek trailhead location.
4. Add a new 62-inch OHV loop (named the "Groundhog OHV Trail") north of NFSR533, adjacent to the Forest boundary. Trail will be constructed to use non-system routes where appropriate

along with new construction. This trail would have a Special Designation on the MVUM for Open to Wheeled Motor Vehicles 62 Inches or Less.



5. Convert the following ML2 roads to 62-inch trail to be named “Lone Cone OHV Trail”; NFSR543.J2 (1.41miles) and NFSR534.J (1.49 miles). Trail would have a Special Designation on the MVUM for Open to Wheeled Motor Vehicles 62 inches or less.

6. Change the designation of the Willow Divide OHV Trail to Special Designation Open to Wheeled Motor Vehicles 62 inches or less. Physical work to the trail are not necessary to accommodate this change.

Trail Proposal in Alternative C only:

1. Create two OHV trail loops off of NFSR611A in the Black Mesa area. Loops would be created from a combination of dual use designation on ML1 roads, and new

construction along unauthorized routes (see table 2.7 below). Allow riding on these trails from July 1 to September 8. Emphasize walk-in hunting in the area after September 8th. Trails maybe temporarily closed if timber sale is proposed

Table 2-10 Black Mesa OHV Trail

Road Number	Type	Miles
611A2	ML1	.84 miles serve as ML1 and OHV Trail
611A4	ML1	.97 miles serve as ML1 and OHV Trail
Unnamed	Unauthorized route	2.37 OHV trail miles
	New Construction	0.2 OHV trail miles

Road Actions - Alternatives B, C, D, and E:

1. Change 4.5 miles of NFSR533 (Groundhog) from ML4 to ML3 (continues as Open to All Motor Vehicles)
2. Near Lone Cone, upgrade NFSR534.F from ML1 stored road to ML2 (1.05 miles) Open to All Motor Vehicles.
3. Near Lone cone upgrade NFSR534E2 from ML1 stored roads to ML2 (0.68 miles) Open to All Motor Vehicles
4. Motor Vehicle Use would be designated on NFSR403 to the current gate location (1.1 miles of ML2 road). Beyond the gate on Groundhog Point, motor vehicle use would not be designated so

public driving of any type of motor vehicle would not be allowed. (ML1 designation for 1.52 miles beyond the gate).

5. Add a spur road off of NFSR403 for dispersed camping to be named Groundhog Point (0.11 miles of ML2 Open to All Motor Vehicles)
6. Change the terminus of FR404 (Black Mesa Spur). Keep the current ML2 designation for 0.63 miles (Open to All Motor Vehicles) and decommission the remaining 0.63 miles.
7. Change the designation of NFSR616 (Middle Peak A) from an ML2 road to an ML1 (closed for storage and not designated for motor vehicle use) road for its entire length, approximately 1.2 miles.
8. Change a portion of NFSR452 from ML2 (Open to All Motor Vehicles) to ML2-Admin (not designated for public motor vehicle use). The ML2 portions would be 0.46 miles up to the meadow and gate. Beyond the gate, downgrade 1.0 miles to ML2-Admin only for ditch access.
9. Add a ML2 new spur road, 0.09 miles in length, off of NFSR 533 (near NFSR403) to be named NFSR732 Willow Divide TH road (Open to All Motor Vehicle Use)
10. Add a new ML2 spur road 0.13 miles in length off of NFSR535 to be named West Dolores B (Open to All Motor Vehicle Use)
11. Add a new ML 2 spur road 0.05 miles in length for administrative access to the Dunton Guard Station. This gravel driveway is not currently in the database.
12. Change 2.2 miles from of NFSR727 Willow Divide Road from ML3 to ML2 (Open to All Motor Vehicles). The remaining 10.70 miles of this road do not change and remain as ML2 (Open to All Motor Vehicles).
13. Upgrade 0.18 miles of NFSR727E from ML1 to ML2 Open to All Motor Vehicles
14. Change FR616A which is currently designated Open to All Motor Vehicles (ML2) to a road closed to public motor vehicle use and managed as a stored ML1 road.
15. No change to NFSR305 (continue to manage the last 0.37 miles as ML1 not designated for public motor vehicle use).
16. No changes are proposed for motor vehicle use on NFSR 611 (Black Mesa), 533 (Groundhog), 534 (Lone Cone).

The tables below show the ML2 roads in Sub-Area 1 that would be decommissioned; the ML2 roads that would be converted to ML1; and the ML1 roads that would be decommissioned:

Table 2-11 ML2 Roads to be Decommissioned in Sub-Area 1 (Alternatives B, C, D and E)

Road Number	Road Name	Total Decommissioned Length, in Miles
404	Black Mesa Spur	0.62
534.E1	Lone Cone E1	0.41
534.I	Lone Cone I	0.46
534.J1	Lone Cone J1	0.423
534.K	Lone Cone K	1.28

Table 2-12 ML1 Roads to be Decommissioned in Sub-Area 1

Road Number	Road Name	Total Decommissioned Length, in Miles
305.B	Clear Fish B	0.60
536	Center Drive	6.39
534J1	Lone Cone J1	0.43
534.A	Lone Cone A	0.38
727.B	Willow Divide B	0.67
727.F	Willow Divide F	0.98

2.2.3.2 Sub-Area 2 – Winter Trail, East Fall and West Fall Creek Trails, and NFSR471

Trail Actions - Alternatives B, C, D, and E

1. Remove motorcycle as a managed use on Winter Trail⁵. Continue managed uses of Hiker/Pedestrian, Pack and Saddle and Mountain Bike.
2. See Sub-Area 5 for alternative descriptions on the Calico NRT.
3. Remove the motorcycle designation on those portions of East Fall Creek Trail and West Fall Creek Trail that are north of NFSR471 (but continue to allow motorcycle use on these trails south of NFSR471). Managed uses for the motorized portions would continue to be Motorcycle, Pack and Saddle, Mountain Bike and Hiker/Pedestrian. Managed uses for the nonmotorized segments would be Pack and Saddle, Mountain Bike and Hiker/Pedestrian.

Trail Actions in Alternative E

1. See Sub-Area 5 for the Calico NRT.
2. Alternative E would remove Motorcycle and a managed use from the entire East and West Fall Creek trails.

Road Actions - Alternatives B, C, D, and E

1. No changes are proposed for NFSR471 Open to All Motor Vehicles (ML3).
2. Decommission the ML1 road FR471A (Eagle Creek A) for 0.68 miles.

⁵The current alignment of Winter Trail through wetland areas presents maintenance challenges regardless of the type of use.

2.2.3.3 Sub-Area 3 – Taylor Mesa, Stoner Mesa, Spring Creek, East Twin Springs and West Twin Springs

Trail Actions - Alternatives B, C, D, and E

1. No changes are proposed for East Twin Springs Trail and West Twin Springs Trail (Motorcycle motor vehicle designation).
2. Add a new 62-inch OHV trail loop off of NFSR201 (Pipe Creek Road). The proposed new 3-mile loop would use 2.6 miles of NFSR202 (Siphon Springs Road) as a ML1 (stored) road. To complete the loop, approximately 0.49 miles of unauthorized road would be added to the road system as a ML1 road and OHV trail (dual designation). If needed for a timber sale, Taylor OHV trail would be closed temporarily to recreation use.

Trail Actions in Alternative C, D and E.

1. Add Motorcycle as a managed use on the Loading Pen Trail which is currently managed for Pack and Saddle, Hike/Pedestrian and Mountain Bike. Reconstruct sections of the trail as needed to accommodate design parameters for motorcycles.

Trail Actions in Spring Creek by Alternative

The table below describes different options for the Spring Creek trail.

Table 2-13 Spring Creek Trail and NFSR547 Actions by Alternative

Alt.	Action
A (No Action)	Keep current alignment and uses for Spring Creek Trail and NFSR547.
B (Proposed Action)	Terminate NFSR547 before Spring Creek at MP 5.0. Convert NFSR547 from Mile Post 5.0 to Mile Post 5.9, to single track trail. This includes removing the road culvert on Spring Creek to improve fish passage. (There would be no motorcycles on Spring Creek Trail and no connection over to NFSR692 (the Pothole Road.))
C	Reconstruct a trail for motorcycle use from the intersection with the Stoner Trail up Spring Creek Trail in its current alignment for approximately 1.5 miles, to NFSR692A Pothole Road ML1 Road and over to NFSR692. NFSR692A would serve as both a ML1 road and a trail for 1.8 miles. Add a fence and cattle guard on the new trail connection to NFSR692 to prevent cattle movement. The remainder of Spring Creek Trail would be a nonmotorized connector to NFSR547. NFSR547 would be same as B, Terminate NFSR547 before creek at Mile Post 5.0. Convert NFSR547 from Mile Post 5.0 to Mile Post 5.9 to single track trail, which would involve removing a culvert on Spring Creek for fish passage.
D	Same as C
E	Same as C

The figures below show the Spring Creek trail area under Alternatives B (Proposed Action) and C.

Alt B



Alt C



Road Actions - Alternatives B, C, D, and E

1. No changes are proposed for NFSR248, and spur roads off of NFSR547 (NFSR547B, NFSR555, NFSR864).
2. Downgrade .025 miles of NFSR545 (Taylor Creek) from ML3 to ML2. No changes are proposed to the remaining sections of this road (13.51 miles of ML3 and 2.42 miles of ML1).
3. Convert the upper end of NFSR547 (Taylor Mesa) to trail where it crosses Spring Creek as described in the trail table above. This would result in converting 0.45 miles of ML3 and 0.54 miles of ML2 road to nonmotorized trail. The remaining 4.93 miles of this road would not change from its current designation open to all motor vehicles and ML3.
4. Decommission the last 1.14 miles of NFSR201 to restrict use beyond Loading Pen trail intersection. Up to that point, the road does not change (open to all motor vehicles and ML2).
5. Change all of NFSR545.J (0.83 miles) from an ML2 to ML1. Remove the motor vehicle designation (road not designated for general public motor vehicle use).
6. Add two unauthorized (user-created) routes as Forest Service system roads to address need for dispersed camping opportunities along County Road 38 (West Dolores Road) to be named NFSR687A (Stoner Dispersed) with a length of 0.13 miles
7. Downgrade 1.46 miles NFSR692 from ML3 to ML2. Establish a terminus and decommission the last 0.62 mile of this road.

The tables below show the ML3 road in this sub-area to be decommissioned; the ML2 roads to be decommissioned; the ML2 roads to be converted to ML1; and the ML1 roads to be decommissioned:

Table 2-14 ML2 Roads to Be Decommissioned in Sub-Area 3

Road Number	Road Name	Total Decommissioned Length, in Miles
201	PIPE CREEK	1.14
547	TAYLOR MESA	0.9

Table 2-15 ML1 Roads to be Decommissioned in Sub-Area 3

Road Number	Road Name	Total Decommissioned Length, in Miles
201.A	Pipe Creek A	0.21
202.A	Siphon Springs A	1.08
202.B	Siphon Springs B	1.46
210.A	Fox Den A	0.66
210.B	Fox Den B	1.66
210.B1	Fox Den B1	0.80
248.D	General Taylor D	0.51
306	Wasp 6	0.74
345	Wasp 10	0.61
367	Wasp 12	00.17
419.A	Taylor Rim A	0.63
419.B	Taylor Rim B	0.93
545.D	Taylor Creek D	0.74
545 F	Taylor Creek F	0.85
547.A	Taylor Mesa A	1.0
547.G	Taylor Mesa G	0.58
547.H	Taylor Mesa H	0.43
547.I	Taylor Mesa I	0.69
692.A1	Pothole A1	0.35
692.A2	Pothole A2	0.37

2.2.3.4 Sub-Area 4 – Priest Gulch, South Calico, Tenderfoot, and Wildcat Area

Trail Actions - Alternatives B, C, D, and E

1. No changes to managed uses on Priest Gulch Trail and South Calico Trail which includes motorcycle, pack and saddle, mountain bike and hiker/pedestrian. (Motor Vehicle Designation is Motorcycle Only).
2. Remove motorcycle as a managed use from Wildcat Trail and remove motor vehicle designation. Other managed uses continue.

Trail Actions in Alternative C Only

1. Add motorcycle as a managed use to the Tenderfoot Trail. Prior to designating motorcycle use reconstruct the upper end of the trail, and add trail hardening at stream crossings.

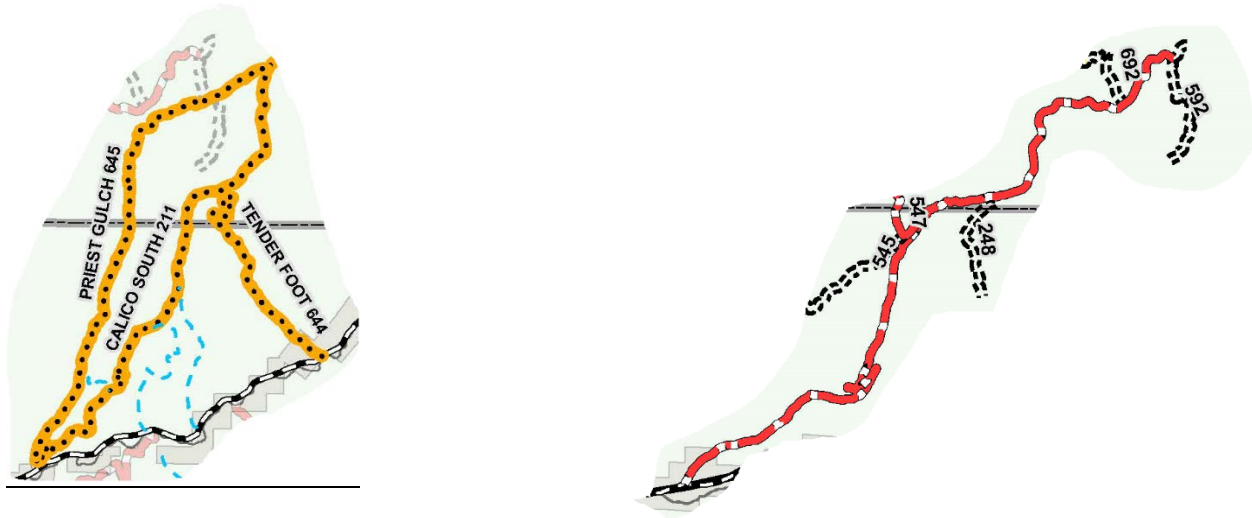
Road Actions - Alternatives B, C, D, and E

1. Reduce the last 1/4 mile of NFSR545 from ML3 to ML2. Approximately 1/4 mile from intersection with NFSR592 there is a berm and gate that will be maintained. Beyond this point NFSR545 will continue to be managed as a ML1 road.

The table below shows ML1 roads in this sub-area to be decommissioned:

Table 2-16 ML1 Roads to Be Decommissioned in Sub-Area 4

Road Number	Road Name	Total Decommissioned Length, in Miles
545.E1	Taylor Creek E1	0..71
545.F	Taylor Creek F	0.4
592.A1	Shoas Park A1	0.64



2.2.3.5 Sub-Area 5 – North Calico NRT, Johnny Bull, Eagle Peak Trails

Trail Actions - Alternatives B, C, D, and E

1. Add a bridge where Johnny Bull Trail crosses the West Fork of the Dolores River.
2. Add Sockrider Trail to the Forest trail system as a nonmotorized trail. This trail parallels the Calico Trail around Sockrider Peak.
3. Reroute a portion of Johnny Bull Trail so that it does not cross private land.
4. See Table Below for the northern most 4 miles of the North Calico NRT
5. The table below describes different options by alternative for the northernmost 4 miles of the Calico NRT to address wetland impacts.

Table 2-17 Different Actions by Alternative for the Northernmost 4 Miles of Calico NRT

Alt.	Actions
A	Maintain current alignment and uses, which include motorcycles. Similar trail developments as exist today.

Alt.	Actions
B	Create a new alignment that includes some decommissioning of existing segments. The result may be more total miles and would also include trail developments such as boardwalks and turnpikes. Old sections of alignment may be decommissioned.
C	Maintain current alignment and uses with additional trail developments to mitigate effects to wetlands (e.g., boardwalks, turnpikes). Any realignment would only be within 500 feet.
D	Same as B
E	Same as C except motorcycle use would be removed. Maintain current alignment and uses with additional trail developments to mitigate effects to wetlands (e.g., boardwalks, turnpikes). Any realignment would be within 500 feet.

Trail Actions in Alternative E

1. Under Alternative E, remove motorcycle as a managed use on the portion of the Calico NRT from the North Calico Trailhead to the intersection with Eagle Peak Trail; remove motorcycle use from all of East Fall Creek Trail and from West Fall Creek Trail; and the Johnny Bull Trail. Managed uses for these trails would be Pack and Saddle, Mountain Bike and Hiker/Pedestrian.

Road Actions - Alternatives B, C, D, and E

1. Upgrade NFSR205 (1.05 miles) from a ML1 to a ML2-Admin road
2. Add a new road spur to be named Johnny Bull TH A for ML2-Admin access to the powerline (0.33 miles)
3. Decommission FR538 (Johnny Bull) which is currently an ML1 road not designated for public motor vehicle use (1.69 miles)

2.2.3.6 Sub-Area 6 – Burnett Creek, Horse Creek, and the Town of Rico

Trail Actions - Alternatives B, C, D, and E

1. Remove motorcycles as a managed use from Horse Creek Trail. Continue managed uses for Pack and Saddle, Mountain Bike and Hiker/Pedestrian.

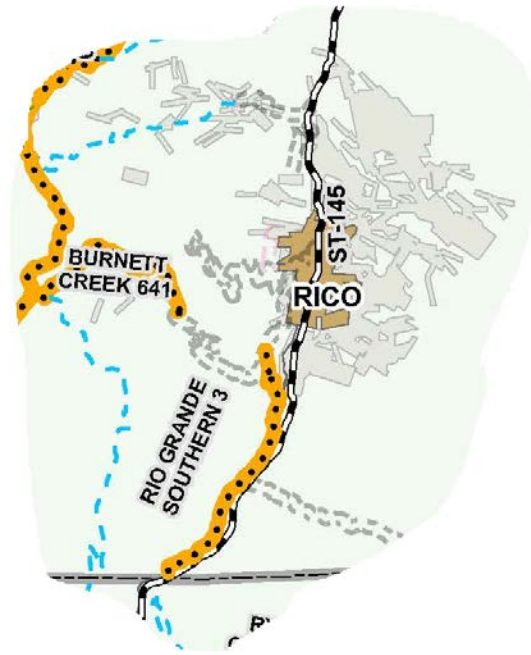
Trail Actions - Alternative B only

Remove motorcycles as a managed use from the Burnett Creek Trail. Continue managed uses for Pack and Saddle, Mountain Bike and Hiker/Pedestrian.

Trail Actions - Alternatives C, D, and E

1. Construct a new trail south from NFSR422 to connect to the new (proposed) Rio Grande Southern Trail and down to the Montelores Bridge. The new trail would be constructed to provide for motorcycles as a managed use as well as Pack and Saddle, Mountain Bike and Hiker/Pedestrian.

2. Allow motorcycles a managed use on Burnett Creek Trail, the new connecting trail, and the new Rio Grande Southern Trail so that motorcycles can connect to Hwy. 145. This will allow licensed motorcycles to from the Calico NRT, around the Town of Rico, and back into Town on Hwy. 145. Signs would encourage motorcycle riders to use the alternate trails. The map shows the approximate location for this route, pending final layout.



Road Actions Common to Alternatives B, C, D, and E

1. Decommission the 0.5 miles of road that parallels the Burnett Road (which may be grown in already), the remainder of this road remains unchanged as Open to All current ML2 designation on 4.1 miles of NFSR422 (Burnett)
2. No changes are proposed for NFSR422A (Open to All Motor Vehicles) and ML2
3. Establish a new terminus for NFSR423 (Horse Gulch) on Forest Service lands downslope from the current parking area. No changes are proposed for 1.1 miles of NFSR423 ML2 road. Road would be designated a Open to All Motor Vehicles (but the public would not be directed to this road as a destination in literature or visitor contacts). Downgrade 0.05 miles of NFSR423 to ML2-Admin.
4. Change NFSR422A1 from a ML2 to a ML2-Admin only road (0.50 miles)

2.2.3.7 Sub-Area 7 –Barlow Road and East Fork Creek Trail

Trail Actions Common to Alternatives B, C, D, and E

1. Correct the maps to reflect the actual alignment of East Fork Trail which will remove trail from the fen/wetland complex. Decommission any remaining trail segments to discourage all types of use on this section.

Trail Actions for Alternative E

1. Remove motorcycles as a managed use on East Fork Trail.

Road Actions Common to Alternatives B, C, D, and E

1. Add physical barriers in the vicinity of the corrals at Lizard Head Pass to manage dispersed camping.
2. Add 0.10 miles of unauthorized road to system as an ML3 to be named 206 (Trestle) and .09 miles of unauthorized road to ML3 to be named Trestle A. Maintain current designations on NFSR578 (the Barlow/Hermosa Road).
3. See table below for NFSR578B and 578B1
4. Change the maintenance level on the first 0.49miles of NFSR496 (Barlow) from ML3 to ML2 (annual maintenance only). Maintain 1.11 miles of the ML2 section of this road. Move the gate downslope and downgrade 0.95 miles from ML2 to ML1 (not open to general public use). Maintain 0.22 miles of ML1 as ML1 and decommission 1.39 miles of ML1 section.
5. Close NFSR149 at a point approximately 0.4 miles back from the current terminus. Convert the 0.4 mile closed portion to a ML1 designation. This will require parking vehicles further away from the Colorado Trail.
6. NFSR424 (Lizardhead) remains open ML2 for .09 miles to the current gate location at the Cross Mountain Trailhead. Beyond the gate, upgrade 0.08 miles of NFSR424 from ML1 to ML2-Admin and decommission the remaining 0.27 miles of this road.
7. Change 1.96 miles of NFSR476B from a ML1 to a ML2Admin-only road
8. Change 204A1 (East Fork A1) from ML1 to ML2 Admin (1.69 miles)
9. Change 0.87 miles of NFSR424A from ML1 to ML2-Admin and decommission 1.45 miles of this road.

The tables below show the ML1 roads in this area to be decommissioned:

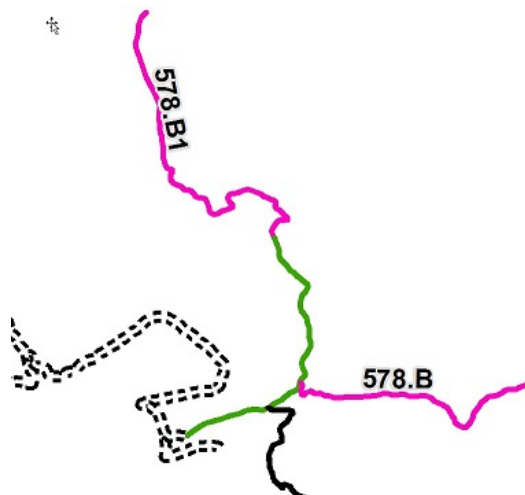
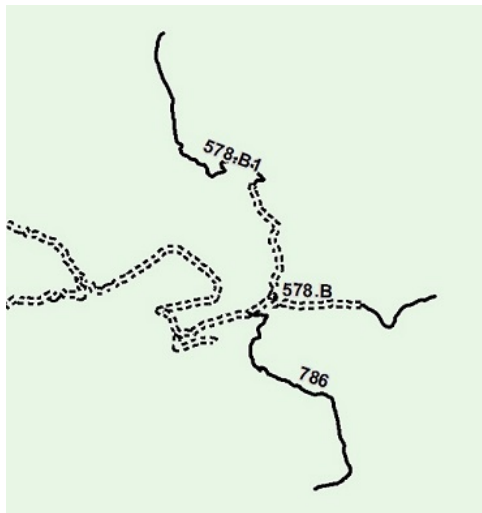
Table 2-18 ML1 Roads to Be Decommissioned in Sub-Area 7

Road Number	Road Name	Total Decommissioned Length, in Miles
424	Lizard Head	0.27
424.A	LIZZARD HEAD A	1.45
496	Barlow	1.39
496.A	BARLOW A	0.98

Table 2-19 Different Actions by Alternative for NFSR578, NFSR578B, and NFSR578B1

Alt.	Actions	Mileages
A	Under Alternative A, no change to the current road designations of 578B and 578B1. NFSR578 would be ML2 and NFSR578B1 would be both ML2 and ML1 with the closure point located at the current designated point. The current closure barrier has degraded and the public currently drives on the ML1 portion. Actions would be taken to re-establish the closure point.	Maintain 1.20 miles of NFSR578B as ML2 and 0.65 miles of ML1 Maintain 0.86 miles of NFSR578B1 as ML2 and 1.73 miles as ML1.
B	NFSR 578.B and 578.B1 would be closed close to the junction with NFSR 578 and converted to a single track trail which would be motorized in Alts B, C and D and nonmotorized in Alternative E. A portion of 578B was previously decommissioned but not recorded in the database so this correction will be made	Maintain 0.12 miles of NFSR578B as ML2 (at intersection with NFSR578) Convert 0.62 miles of NFSR578B to single track trail. Decommission 0.68 miles of ML2 and 0.65 miles of ML1. Convert 0.82 miles of NFSR578B1 ML2 to single track trail. Decommission 0.04 miles of ML2 and 1.73 miles of ML1
C	Same as B	Same as B
D	Same as B	Same as B
E	Same as B but prohibit motorcycle use on the Trail, since East Fork Trail would be nonmotorized.	Same as B

Green roads would convert to trail use and pink lines would be decommissioned in Alts B, C, D and E



Sub-Area 8 – Ryman Creek, Lower Ryman, Scotch Creek, and NFSR564

Trail Actions Common to Alternatives B, C, D, and E

1. Extend Corral Draw Trail approximately 350 yards to the northwest, across the Colorado Trail, and tie it in to NFSR550 (the Hotel Draw Road), which connects to NFSR564 (the Divide Road).
2. Add a spur road if needed to accommodate popular dispersed camping at the corrals off of NFSR564, near the Ryman Creek Trailhead (requires field review and separate NEPA).
3. Remove motorcycle as a managed use on Ryman Creek Trail.
4. Decommission a section of the Upper Ryman Creek Trail



Road Actions Common to Alternatives B, C, D, and E

1. No changes are proposed for NFSR550.1 (the Scotch Creek Road) and NFSR564 (the Divide Road) – Open to All Types of Motor Vehicles.
2. Decommission 0.28 miles of NFSR564.D

2.2.3.8 Sub-Area 9 – Bear Creek, Little Bear, Grindstone, Rough Canyon, and Hillside Drive

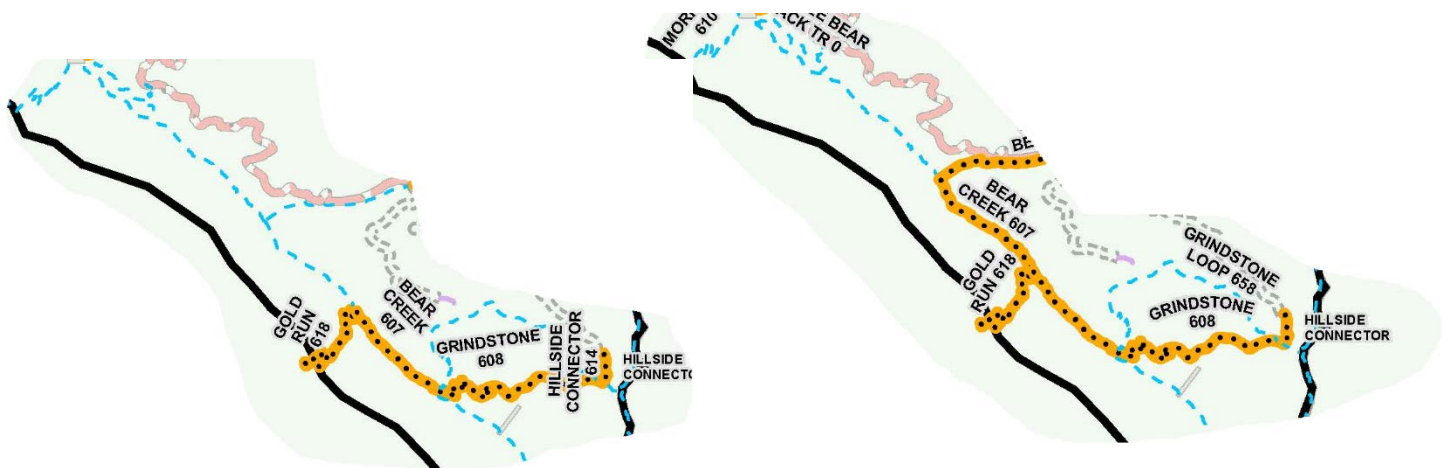
Trail Actions Common to Alternatives B, C, D, and E

1. Add the existing Little Bear Pack Loop Trail (1.73 miles) and Pack Connector (0.52 miles) to the system as nonmotorized trails.
2. Change the end of the Grindstone Trail (0.27 miles) to a nonmotorized trail where it intersects with the Colorado Trail so that a motorized trail does not 'dead-end' at a nonmotorized trail.

Table 2-20 Different Actions by Alternative for the Bear Creek Drainage Trails

Alt.	Actions
A	Allow motorcycle use on Bear Creek, Gold Run, Grindstone, and Little Bear Trails
B	Allow motorcycles to use the middle third of Bear Creek trail and all of Gold Run, Grindstone, and Little Bear Trails. Remove motorcycle use from the lower third of Bear Creek Trail. Add motorcycle as a managed use to the Hillside Connector for a connection to Hillside Drive
C	Allow motorcycles use the Gold Run and Grindstone trails and the section of Bear Creek trail between those two trails to provide a connection. Remove motorcycle use from lower third of the Bear Creek trail and the Little Bear trail. Add motorcycle as a managed use to the Hillside Connector for a connection to Hillside Drive
D	Remove motorcycle use from Bear Creek, Gold Run, Grindstone, and Little Bear Trails entirely.
E	Same as D

Map below shows Alt C on Left and B on Right – Alts D and E would remove motorcycles from entire trail



Road Actions Common to Alternatives B, C, D, and E

1. Decommission the last 0.24 miles of NFSR358. No change to the remainder of this road Open to All Types of Motor Vehicles, ML2 (3.23 miles).
2. No changes proposed on 0.70 miles of NFSR208 (ML2 and Open to All Types of Motor Vehicles). Decommission the remaining 0.86 miles of this road.
3. Shorten the ML3 portion of NFSR436 (Hillside Drive) by approximately 0.69 mile and convert that 0.69 portion to ML2.
4. No changes proposed for NFSR435 (Roaring Fork Road) – Open to All Types of Motor Vehicles.

The tables below show the ML2 and ML 1 roads in this sub-area to be decommissioned:

Table 2-21 ML2 Road to Be Decommissioned in Sub-Area 9

Road Number	Road Name	Total Decommissioned Length, in Miles
208	RIO LADO	0.86
358	GRINDSTONE	0.24

Table 2-22 ML1 Roads to Be Decommissioned in Sub-Area 9

Road Number	Road Name	Total Decommissioned Length, in Miles
208.A	Rio Lado A	1.28
208.A1	Rio Lado A1	0.58
208.C	Rio Lado C	1.93
208.D	Rio Lado D	0.74
358.B	Grindstone B	0.43
436.A1	Hillside Drive A1	0.84

2.3 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED STUDY

This section provides a description of alternatives that were considered but eliminated from detailed study, followed by the rationale for not carrying them forward.

2.3.1 Adopt 2005 Motor Vehicle Designations

Earlier editions of the San Juan National Forest Visitor Map depicted where motor vehicles could be used. The policies at that time embraced an ‘open unless designated closed’ philosophy. Policies identified which types of motor vehicles would be prohibited on roads or trails and identified where using a motor vehicle ‘Off Forest Development Roads’ was prohibited. In areas marked with an ‘A’, ‘B’ or ‘C’, the use of motor vehicles Off of Forest Development Roads was prohibited and within these ‘restricted’ areas certain trails were highlighted that allowed certain types of motor vehicles. Areas marked with an ‘F’ designation were listed as ‘open’ to all types of motor vehicle use. There were no restrictions on use of motor vehicles ‘Off Forest Development Roads’ in the ‘F’ areas. The earlier visitor maps also included seasonal restrictions. A number ‘1’ on the map for example, corresponded to wildlife related timing restrictions by type of motor vehicle.

Commenters have suggested that these previous motor vehicle policies worked well and already meet the intent of the 2005 travel rule. They asked that the earlier policies displayed on the 2005 Visitor Map be adopted as the future travel management plan for the RWD area.

This alternative was not carried forward for detailed study for the following reasons,

- 1) The older policies of ‘open unless designated closed’ are different from travel rule policies which direct the forest service to use the policy of ‘closed unless designated open’
- 2) Nearly 1/3 of the RWD analysis area had the ‘F’ symbol on the visitor maps. This meant that motor vehicle travel Off Of Forest Roads and Trails was not prohibited in areas that included

alpine habitat and wetland areas. Problems associated with this situation are 1) Off road travel by motorcycles in alpine areas had the potential for creating damage, 2) Off road travel in wetland areas by vehicles or OHVs had the potential to damage vegetation or channel water away from the wetlands, 3) OHV use of ML1 stored roads kept these roads from re-vegetating to a 'stored' state.

- 3) Applying this 'open' designation into the future could detract from blocks of habitat that provide wildlife security, and increase unplanned routes not engineered for proper drainage.
- 4) Increases in OHV use, especially ATV and UTV riding out of the Groundhog area, add to the need for managed system of trails in the areas previously identified with the 'F' designation.
- 5) This alternative would fail to meet the Purpose and Need.

2.3.2 Designate a Motor Vehicle Area

Under this alternative, an area would be established open to motorcycles only. The area would restrict other types of motor vehicles (ATVs, UTVs and 'full size' vehicles) to designated roads and trails. Commenters that brought this idea forward suggested that motorcycles would likely follow another trail that someone, something (equipment) or some animal has already created that, more often than not, would be a cattle trail, abandoned road, logging road, miners route, game trail, power line easement, abandoned railroad grade, or some other linear feature. An area designation for motorcycles only would be less impactful than an area designated for all types of motor vehicles.

This alternative was considered and the ID team brainstormed potential areas that might fit this sort of area designation. Due to the topography, density of trees, and propensity of high elevation wetlands the team could not identify an area within the RWD landscape that would lend itself to motor vehicle cross country travel. Although current numbers of motorcycle riders is low, an area designated open to motorcycles may increase visits, especially since the area would be published on the MVUM. Future use may increase so that cross-country motorcycle use on pathways through the forest could 1) detract from security habitat for big-game, 2) cross wetlands or riparian areas 3) make pathways more visible leading to travel by other types of use (horse, hike, mountain bike), 4) detract from walk-in hunting experience.

Commenters suggested that 'area' designations may be appropriate for other parts of the Dolores Ranger District. This would be outside the scope of this analysis and would need to be proposed and addressed separately.

2.3.3 Develop More Trailhead Parking Areas

The Proposed Action included proposals for developed trailhead parking areas at various locations. However, these areas were dropped from further consideration due to decreasing recreation budgets. Some roads require turnarounds, and these are listed by Alternative.

2.3.4 Add More Nonmotorized Trails

The Proposed Action included additional new nonmotorized trails. However, the ID Team eliminated most of these from further consideration in order to focus on motor vehicle uses for this analysis. Nonmotorized trails carried forward are Little Bear Pack Loop, Pack Loop Connector and Sockrider Trails.

2.3.5 Add motorcycle use to Salt Creek Trail

In consideration of Issues that stemmed from closing Ryman Creek Trail to motorcycle use, the ID Team looked at Salt Creek Trail as a motorcycle riding option. However, Salt Creek Trail's soils, topography, and alignment are very similar to those of Ryman Creek Trail. Morrison Formation soils and steep slopes create the potential for down-cutting. Therefore, since maintenance issues and resource impacts would be similar to those on Ryman Creek Trail, the ID Team chose to eliminate the motorized use of Salt Creek Trail from further consideration.

2.3.6 Add Motorcycle Use on the Morrison Trail

The initial Proposed Action included motorcycle use on the Morrison Trail. The Morrison Trail passes directly adjacent to homes through the alignment of the Morrison Stock Driveway. The topography in the area limits re-routing options. The Forest Service has reviewed the easements for the Morrison Trail and it was concluded that motorcycle use is not in keeping with the uses described in the easement language. Because of this, coupled with issues identified by the current homeowners in the area, an alternative to maintain the Morrison Trail for motorcycle use was considered but eliminated from detailed study and is not carried forward in any alternative.

2.3.7 Add ATV/UTV trail alignment off of FR496 off of Barlow (Hermosa) Road

An OHV (ATV/UTV trail) was listed in the initial Proposed Action off of FR496. However, field reviews in summer of 2015 showed extensive wetland areas so the proposal was eliminated from further consideration.

2.3.8 Different Proposal for Taylor OHV (ATV/UTV) Trail Proposal off of FR201

A proposal to follow the current use which is to drive to the current end of FR201, drive up the fenceline, then swing back around in a loop back to FR201 was considered. However, this loop would not take advantage of store ML1 roads which have better alignment and drainage.

2.3.9 Timing Restrictions on Roads

Timing restrictions on roads were considered but not carried forward because roads don't bisect blocks of habitat in the same manner that trails bisect habitat. Trails cross areas of habitat that are otherwise not disturbed by motor vehicle noise so a timing restriction could provide additional habitat effectiveness. However, timing restrictions on roads is listed as a possible adaptive management action that could be used if trends in elk populations decline below target levels and CPW and FS biologists confirm a road restriction is needed (see Wildlife section Chapter 3).

Timing restrictions on roads in the fall was considered but carried forward because motor vehicle use on roads was not identified as an issue and many hunters rely on motor vehicle use of the road system to access hunting areas. Trails bisect areas otherwise used as 'walk-in' areas by hunters so motorcycle and ATV use of trails impacts that experience. Therefore fall restrictions were proposed on trails but not roads.

2.3.10 Timing Restrictions on Nonmotorized Recreation

Timing restrictions on nonmotorized recreation is outside the scope of this analysis. The disturbance effects of nonmotorized recreation activities is noted in the affected environment and cumulative effects sections of the wildlife habitat analysis. Restrictions on nonmotorized recreation could be an

adaptive action in the future if elk populations drop below target levels and recreation disturbance is determined to be one of the factors effecting elk habitat (see the Terrestrial Wildlife section of Chapter 3).

2.3.11 Separating Uses on Trails

In some areas of high concentrations of use, maintaining separate trail networks for different uses may reduce conflict and enhance public safety and the recreational experience. However, use in the RWD area is not of such a high concentration that dedicating trails to one type of use is necessary. District staffs observations is that trails have been successfully shared. The cost of developing trail networks specific to certain types of use is not feasible given current and expected resources. The burden of administering separated trails systems is also not feasible given current staffing.

2.3.12 Trails of Concern from Previous Litigation

Fourteen trails were identified in previous litigation. An Alternative to remove motorcycles as a managed use from all fourteen trails was considered but not carried forward because each trail was evaluated individually.

2.4 COMPARISON OF ALTERNATIVES

2.4.1 Alternative Comparison Table

The table below briefly summarizes the differences between alternatives for impacts to the environment.

Table 2-23 Comparison of Environmental Impacts by Alternative

Resource	Alternative A (No Action)	Alternative B (Proposed Action)	Alternative C	Alternative D	Alternative E
Elk Habitat	Effective elk habitat with connectivity	Same as Alternative A (effective habitat with connectivity) with some polygons slightly larger than Alternative A	Same as Alternative A (effective habitat with connectivity) with some polygons smaller than Alternative B but larger than Alternative A	Same as Alternative A (effective habitat with connectivity) with some polygons smaller than Alternative B but larger than Alternative A, including slight increase in Bear Creek polygon	Same as Alternative A (effective habitat with connectivity) with some polygons larger due to trails closed to motorcycles
Impacts to Streams from Crossings or Close Proximity	Most	Less than Alternatives A and C but more than Alternatives D and E	Less than Alternative A, more than Alternatives B, D, or E	Less than Alternatives A, B, or C and more than Alternative E	Least (Note: Trails still exist in current location but user group changes)
Impacts to Fens or Unverified Fens	Most	Least	More than Alternative B, less than Alternative A	More than Alternative B, less than Alternative A	More than Alternative B, less than Alternatives A, C or D
Impacts to Riparian Vegetation	Least potential impact	More potential impact than Alternative A, but less than Alternatives C, D, or E	Most potential impact (adds Tenderfoot Trail)	Less than Alternative C, more potential impact than Alternatives A or B	Less than Alternative C, more potential impact than Alternatives A or B
Impacts to Sensitive Fisheries	Most	Least	More than Alternative B but less than Alternative A	Same as Alternative C	Same as Alternative C

3 ENVIRONMENTAL CONSEQUENCES

3.1 CHAPTER ORGANIZATION

This Chapter is organized into three major sections:

- Natural and Cultural Resources
- Public Uses and Forest Management
- Maintenance and Administration

Within each of these three major headings, various sections address required elements for Forest Service Travel Management (36 CFR 212), the National Environmental Policy Act (36 CFR 220), or other laws (see the Table of Contents for Chapter Headings).

The Appendices include Appendix A – Maps; Appendix B – Design Features; Appendix C – Sub-Area Descriptions; Appendix D – Crosswalk with Travel Analysis Process (TAP) Report.

3.2 ASSUMPTIONS FOR THIS ANALYSIS

The paragraphs below described assumptions used for this analysis.

3.2.1 Focus on Motor Vehicle Use

This analysis focuses on motor vehicle use of roads, 62inch OHV trails, and single track motorcycle trails. The effects of nonmotorized uses on those same roads and trails are discussed as part of the affected environment. The effects of trails currently designated for nonmotorized uses, are discussed in the affected environment or as a cumulative effect if relevant to the topic analyzed.

3.2.2 Cross Country Travel, Enforcement, and Illegal Use

Three different kinds of cross-country travel have occurred in the past in this landscape: 1) riding or driving on closed roads, usually Maintenance Level 1 (ML1) stored roads not open to the public; 2) riding on game trails, stock trails, old skid roads, under powerlines or other “pathways” through the forest; 3) driving across untracked ground such as through meadows or across the forest floor.

Earlier policies embraced an ‘open unless designated closed’ policy. Policies identified which types of motor vehicles would be prohibited on roads or trails and identified where using a motor vehicle ‘Off Forest Development Roads’ was prohibited or not prohibited. Within the northern 1/3 of the RWD landscape, there were no restrictions on use of motor vehicles ‘Off Forest Development Roads’. When these past policies were in place ATV and UTV riding occurred on many of the ML1 closed roads in the northern third of the analysis area and were especially popular on Groundhog Point, Black Mesa and the Lone Cone area. To a lesser extent, motorcycles also traveled on game trails, livestock trails, or other pathways and at times, cross-country in alpine areas (staff observations). In the southern 2/3’s of the RWS landscape, Motor Vehicle use was restricted to roads and trails (depicted on the Visitor Maps)

including Taylor and Stoner Mesas. Although travel off road has been prohibited on Taylor Mesa for more than 20 years, there has been a low-to-moderate level of illegal off road travel (personal conversation Taylor permittee 2014)).

In 2010 all travel Off of Forest Development Roads and Trails was prohibited across the RWD area by a Forest Order. This order expired December of 2015. All the action alternatives considered in detail for this analysis include designating motor vehicle use to roads and trails. No motor vehicle areas were carried forward for detailed study.

No Alternative can guarantee an increase in law enforcement presence or change the fines associated with illegal motor vehicle travel or resource damage. However, each Alternative includes providing drivers and riders with information (website, maps, and brochures), posting signs, installing physical barriers at high-priority locations, contacting hunters during hunter patrols, and contacting recreationists during high-use weekends like the Fourth of July and Labor Day. These activities are occurring currently and would continue at similar levels. In addition, the District will continue to pursue partnerships for accomplishing road and trail work, providing public education materials, and responding to areas of resource concern.

Some illegal driving of motor vehicles off of designated routes is expected where people may have old maps, old information about driving policies, or are simply determined to use a route. The amount of illegal riding may vary by Alternative in the short term as people adjust to the new road and trail system. In the long term, riding off of designated routes should decline, although some level of illegal off-route use will occur. Moreover, as use increases there will be more people and thus, potentially, more instances of illegal use. So, while there may be more people complying with motor vehicle rules, it's possible to also have more individuals traveling off roads and trails over the long term.

3.2.3 Trends in Use

The District does not have detailed monitoring data that quantitatively describes levels of use within the RWD area specifically. For this analysis it was assumed that current recreation use on trails is low to moderate across the RWD area. Recreation use of trails is on an upward trend as more nonlocal riders hear about the trails and travel to the RWD area. Upward trends in use are expected. However, overcrowding is not anticipated to occur on any trail in the RWD system during the next 10-20 years. Overcrowding was not identified for the San Juan National Forest in the National Visitor Use Monitoring surveys. In this DEIS, qualitative descriptions of the types of recreation use on roads and trails are based on observations by District staff.

3.2.4 50-Inch versus 62-Inch Trails

For the purposes of this analysis, the environmental effects of a 50-inch trail are assumed to be the same as the environmental effects of a 62-inch trail. The same trail design, maintenance, and administration would occur regardless of trail width. UTVs are similar to ATVs. Motorcycles may use these trails.

3.2.5 Map Accuracy and Data Limitations

The maps are not 100% accurate to on-the-ground alignments. However, the amount of discrepancy is not so great that an additional alternative is needed to describe on-the-ground use. As specialists write their effects analysis, they may qualitatively describe minor errors in alignment.

Private land boundaries west of the Town of Rico were surveyed and found to be different from the boundaries displayed on past Visitor Maps. Private land boundaries for this analysis include the most updated survey information.

National Visitor Use Monitoring data is presented in the socio-economic section but this data pertains to the forest level and is not site specific.

There is no quantitative data about numbers of visitors by types of use. Information describing current use and anticipated trends is the qualitative judgement based on staff experience. A one year survey was conducted to count visitation but not enough data existed to make conclusions so this survey was not used. There is not a complete inventory of site locations or use data for dispersed sites. There is no data available for conflicts between motor vehicle use and recreation use of the area. General qualitative descriptions of the impacts of motor vehicle use on recreation experience is provided based on Forest Service information that relates to recreation management agency-wide.

3.2.6 Mixed Use

The FS acknowledges the need to mix highway legal and non-highway legal traffic on some National Forest System roads. These designation decisions are advised by professional engineering studies and will include design features deemed appropriate by the engineering studies. Considerations in the studies included 1) Speed, volume, composition, and distribution of traffic on roads; and 2) compatibility of vehicle class with road geometry and road surfacing. The focus for motorized mixed use analysis was on ML3 and ML4 roadways where staff had identified that there may be some safety concerns. These roadways were main access routes. The Mixed Use Report located in the project file determined that that the roads under review could be designated for motorized mixed use without increasing the safety risk to the public. The report includes recommended mitigation measures (road side brushing, and 'share the road' signing). These measures have been implemented or in the process of being implemented and are also listed in the Design Features in Appendix B to be implemented under any of the RWD alternatives analyzed in this DEIS.

3.2.7 Use of areas Adjacent to Roads

Roads transport people to certain areas where people can disperse and participate in the recreational activity of their choice. The effects analysis below assume that people may park a vehicle up to 300 feet off of forest roads for the purposes of dispersed camping. It is assumed that dispersed camping could occur anywhere in the 300 foot area adjacent to roads except where specifically identified as closed to parking for dispersed camping (trailheads, specific wetland locations listed in the Design Features Appendix B). Such use may create compaction but the exact location is unknown. For activities other than overnight dispersed camping, research suggests that the majority of users recreate within ½ mile of a road or trail (Cordell and Bergstrom 1989). Therefore this analysis assumes people may picnic, walk, photograph, etc. within ½ mile of roads or trails.

3.2.8 Road Design

Within the constraints imposed by funding and other resources and priorities established by Congress and the Administration, the FS does what it can to provide a safe experience for users traveling NFS roads. It is always the ultimate responsibility of the user to drive safely and follow all laws. The Traffic Control Devices Handbook and Geometric Design of Low Volume Local Roads discuss designing roads for

the prudent, reasonable, competent driver. Road design according to these handbooks also helps prevent resource damage by providing for proper drainage.

3.2.9 Natural Disturbances

Natural disturbances such as wildfire, drought, large precipitation events, and tree die-off from insect and disease could cause effects to resources. Drought or high-precipitation events may occur in the future. The effects described in this document assume generally 'normal' conditions typical of recent past years for this area. Currently, when culverts are replaced they are often re-sized to handle run-off events. The Forest Service would respond to any major disturbance event with separate actions as needed to provide for public safety. Examples could be closing an area with too many standing dead trees or closing a road and trail that has slumped or washed out.

3.2.10 Criteria for Designating Motor Vehicle Use

As described in the Purpose and Need there are various general criteria for designating motor vehicle use and additional criteria related to motor vehicle use of trails (with the objective of minimizing). The table below provides a crosswalk between the criteria and the various sections in Chapter 3. This table is developed to assist the reader. Final conclusions about the criteria will be provided in the final decision documents.

Sections in DEIS	Watershed, Riparian, and Water	Fisheries	Geology/Soils	Rare Plants	Terrestrial Wildlife	Cultural Resources	Rangeland and Weed Management	Forest Management and Forest Products	ATV/UTV Riding Opportunities	Motorcycle Riding Opportunities	Nonmotorized Trail Opportunities	Recreational Settings and Experiences	Hunting	Roadless Characteristics	Trail Maintenance Feasibility	Socio-Economic	Road Maintenance and Administration	Effects to Neighboring Federal Lands	Compatibility with Existing Conditions in Populated Areas	Public Safety	DESIGN FEATURES APPENDIX B
General Criteria - Consider Effects on the Following.																					
Natural Resources	X	X	X	X	X																X
Cultural Resources						X															X
Public Safety															X		X			X	
Provision of Recreation Opportunities									X	X	X	X	X	X							
Access Needs																					
Conflicts Among Use of the NF System							X	X		X	X	X	X	X							
Need for Maintenance and Administration that would arise	X		X												X		X				X
Availability of resources for maintenance and administration															X		X				
Consider Effects on the Following with the Objective of Minimizing																					
Damage to Soil,	X		X																		X
Damage to Watershed,	X																				
Damage to Vegetation				X																	
Damage to Other Forest Resources		X				X	X	X													X
Harrassment of Wildlife					X																
Significant Disruption of Wildlife					X																
Conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands										X	X	X			X						
Conflicts between motor vehicle use and existing or proposed recreational uses of neighboring Federal Lands																	X				
Conflicts among different classes of motor vehicle uses on neighboring federal lands																X					
Compatibility with existing conditions in populated areas, taking into account sound, emissions, and other factors																			X		

3.2.11 Topics Not Affected and Therefore Not Addressed

The following topics are not addressed in this analysis.

1. Although this document makes a note where private land Rights of Way (ROW), Special Use Permits (SUPs) or Road Use Permits (RUPs) may be needed, this analysis and decision will not include those instruments or decisions. They would be processed under separate NEPA analysis and decision making.
2. Overnight Use at Developed Sites is not affected and there is no change to access, type of services provided, or size of campgrounds.
3. No changes are proposed under any alternative that would affect public driving on Hwy 145 or the West Fork road, or driveways to local businesses along Hwy 145 or the West Fork Road.
4. Wilderness Areas are not directly affected by any alternative. There are no proposed changes to trails within the Lizardhead wilderness.
5. Decisions regarding administration of existing outfitter guide permits, or decisions about new permits are made separately and are not affected by this project.

6. The Grizzly Research Natural Area was established in the Forest Plan for RNAs for non-manipulative research and education, and for the preservation of biodiversity. The East Fork trail is in proximity to the boundary of the RNA but is not within the RNA.
<http://www.fs.usda.gov/detail/sanjuan/landmanagement/planning/?cid=stelprdb5432707>
7. Public use of developed campgrounds continues and is not affected by any of the RWD alternatives.
8. Public use of the Dolores River such as fishing and boating provides additional recreation opportunities in the area. None of the RWD alternatives would alter public use of the river or its scenic river outstanding and remarkable values.
9. Public use of the Hwy 145 Scenic Byway and associated parking spots, businesses, and viewpoints provide additional recreation opportunities. None of the RWD alternatives would alter recreation use of the Scenic Byway.

3.3 BEST AVAILABLE SCIENCE

This analysis is based on the best available science, as evidenced by the following:

- Recent site-specific field inspections and reviews of the analysis area by the Interdisciplinary Team,
- Use of research, scientific studies and information as documented in the literature cited and references section of this document
- Review of the Final EIS for the Forest Plan. San Juan National Forest Management Indicator Species (MIS) and Sensitive Species Assessments,
- Exchange of Information with staff from the Colorado Parks and Wildlife, and Montezuma and Dolores counties
- Expert opinions of Interdisciplinary Team resource specialists, and use of most recent Geographic Information System (GIS) resource layers, and Wildlife GIS modeling.

NATURAL AND CULTURAL RESOURCES

3.4 WATERSHED RIPARIAN AND WATER RESOURCES

This section of the DEIS addresses topics related to the issue of wetland impacts. In addition, 36 CFR 212 lists elements to consider when designating trails for motor vehicle use with the objective of minimizing. Criteria include In addition to the criteria in paragraph (a) of this section, in designating National Forest System trails and areas on National Forest System lands, the responsible official shall consider effects on the following, with the objective of minimizing: (1) Damage to soil, watershed, vegetation, and other forest resources; The Watershed, Soil, and Rare Plants section below provides information related to these criteria.

3.4.1 Affected Environment

3.4.1.1 *Landscape setting and climate*

The RWD landscape is within the Upper Dolores River Watershed and straddles two major physiographic provinces: the Southern Rocky Mountains and the Colorado Plateau. This incredibly varied landscape includes layered sedimentary rock mesas, such as Stoner Mesa and Taylor Mesa. The flat layered strata of the mesas gives way to the crests of the Rico Mountains and Lizard Head Wilderness, formed from the San Juan Uplift and subsequently sculpted by glaciers. The town of Rico occupies the center point of the Rico Dome, an uplift that produced mineralized faults and pockets of silver, lead, zinc, and pyritic ore (Blair, 1996). Mineralization around Rico and subsequent mining has had ramifications for the water quality of the Dolores River.

Semiarid southwestern Colorado receives atmospheric moisture during midwinter that originates in the Pacific Ocean. This moisture produces heavy snowfall at the higher elevations that produces a spike in the streamflow with spring melt. From about mid-June to early October, monsoon-like thunderstorms are produced from the dissipating tropical storms of the Pacific Ocean and Gulf of California. Some of the largest floods on record have occurred during the monsoons, including the floods of October 1911, August 1951, and September 1970 (Pruess, 1996).

The morphology of the streams reflects the geologic history and hydroclimatology of the analysis area. The broad, low-gradient alluvial valleys of the Dolores and West Dolores Rivers are fed by numerous steep-gradient drainages that descend from the mesas or uplifted mountains. These drainages are generally step-pools and fairly resistant to high-flow disturbances. These streams typically have coarse boulder and cobble channel beds. Floodplains are narrow or nonexistent. Narrow valley bottoms promote high connectivity between hill slope and valley bottom, with debris flows and landslides episodically introducing sediment, wood, and nutrients directly to the channel. Low-gradient streams, such as the Dolores and West Dolores and parts of Bear Creek, can be described as response reaches because of their tendency to accumulate excess sediment preferentially in pools (Montgomery and Buffington, 1997).

3.4.1.2 *Watershed Assessments*

The RWD landscape lies within 14 sixth-level subwatersheds in the West Fork and Upper Dolores Watersheds (Figure 1). It also includes a quarter of the Headwaters of Disappointment Creek and about 3 percent of the Headwaters of Naturita Creek subwatersheds.

Aquatic, Riparian, and Wetland Ecosystem Assessment: Watershed condition and vulnerability to disturbance has been analyzed on the San Juan National Forest in two different ways. The Aquatic, Riparian, and Wetland Ecosystem Assessment (ARWA) were completed to describe the aquatic and terrestrial ecological characteristics of watersheds on the Forest as well as the influence upon them by anthropogenic (human) activities. This analysis was completed for the *Forest Plan* to identify watersheds that may be good candidates for remediation. Six different activity categories were used for this process: recreation, urbanization, mineral extraction, transportation, vegetation management, and water use. A value of 1 through 5 was assigned to each watershed, with 5 being the highest percentile of impact. The table below displays the watersheds within the RWD Landscape that were identified by this analysis as having high levels of anthropogenic disturbance (*Forest Plan*, p. I-1):

Table 3-1 Watersheds within the RWD Landscape with Highest Levels of Anthropogenic Disturbance

HUC6	HUC6 Name	Recreation	Urbanization	Mineral Extraction	Transportation	Vegetation Management	Water Use	Total
1403000020209	Upper Dolores River-Taylor Creek	4	2	3	5	4	5	23
1403000020105	Cottonwood Creek-West Dolores River	2	3	3	3	5	5	21

The ARWA also determined the sensitivity of a stream to human-caused disturbance based on the physical characteristics of the stream and its watershed. None of the sixth-level watersheds within the RWD landscape were identified as being within “the most sensitive to anthropogenic activities” category. However, the Assessment did capture that the Upper Dolores River-Taylor Creek Watershed had the highest cumulative ranking for wetlands with a high potential to be influenced by anthropogenic activities (AWRA, Report 3 of 3, p.7).

Watershed Condition Classification: The Watershed Condition Classification was completed in 2012 and used 12 indicators composed of attributes related to watershed processes (WCC, p.4). The indicators and their attributes are surrogate variables representing the underlying ecological functions and processes that affect soil and hydrologic function. The indicators were summarized into a final rating of good, fair, or poor (2011, *Watershed Condition Classification Technical Guide*).

A “good” rating describes a watershed with high geomorphic, hydrologic, and biotic integrity relative to natural potential condition. The rating suggests that the watershed is functioning properly.

A “fair” rating equates a watershed with moderate geomorphic, hydrologic, and biotic integrity relative to natural potential condition. The rating suggests that the watershed is functioning at risk.

A “poor” rating equates a watershed with low geomorphic hydrologic and biotic integrity relative to natural potential condition. The rating suggests that the watershed is impaired or functioning at unacceptable risk.

The table below describes watersheds by watershed condition classification. None of the watersheds in the RWD landscape have a ‘poor’ rating.

Table 3-2 Watershed Condition Framework Assessment Results for RWD Landscape

HUC6	HUC6 Name	2011 WCA Watershed Rating
1403000020101	Headwaters West Dolores River	Good
1403000020102	Groundhog Creek	Good
1403000020103	Fish Creek	Good
1403000020104	Johnny Bull Creek-West Dolores River	Good
1403000020105	Cottonwood Creek-West Dolores River	Fair

HUC6	HUC6 Name	2011 WCA Watershed Rating
140300020201	Headwaters Dolores River	Good
140300020202	Cayton Valley-Dolores River	Good
140300020203	Dolores River-Rico Valley	Fair
140300020204	Scotch Creek-Dolores River	Fair
140300020205	Roaring Forks Creek	Good
140300020206	Bear Creek	Fair
140300020207	Priest Gulch-Dolores River	Good
140300020208	Stoner Creek	Good
140300020209	Taylor Creek-Dolores River	Fair
140300020502	Headwaters Disappointment Creek	Good

3.4.1.3 Selected Forest Plan Standards and Guidelines for Watershed Health

- Access and Travel Management Standard (p. 102):
 - a. 2.13.27 Road Density for Water Quality and Watershed Health on SJNF Lands. In order to protect water quality and watershed function, road densities on SJNF lands should not exceed 2 miles/square mile within any U.S. Geological Survey 6th level Hydrologic Unit Code (HUC) watershed. In order to protect major surface source water protection areas for municipalities within USGS 6th level HUC watersheds, road densities on NFS lands should not exceed 1.5 miles/square mile.
- Terrestrial Ecosystems and Plant Species Guideline (p. 30):
 - a. 2.2.76 Ground-disturbing activities in watersheds that are highly sensitive to anthropogenic disturbances, as identified in Volume III, Appendix I, should be designed to avoid or mitigate erosion or compaction.

Road densities will be described later in this section. The Forest Plan Volume III, Appendix I, Table I.1 lists Upper Dolores River-Taylor Creek and Lower West Dolores River (Cottonwood Creek-West Lower Dolores River) Watersheds; none of the RWD watersheds are listed in Table I.2 or 1.3 of Appendix I.

3.4.1.4 Water Quality

Beneficial Use Classification: The streams and wetlands within the analysis area have been classified by the State of Colorado by river segment as having the following beneficial uses:

- Cold Water Aquatic Life 1
- Cold Water Aquatic Life 2
- Recreation E – existing primary contact use
- Water Supply
- Agriculture

One exception to this designation is river segment 3 of the Dolores River from the confluence with Horse Creek to just above the confluence with Bear Creek. This river segment is not designated for water supply. The other beneficial uses remain the same for this river segment.

Another exception to this designation is river segment 9 of Silver Creek from the Town of Rico's water supply diversion to the confluence with the Dolores River. This river segment is designated as Cold Water Aquatic Life 2, Recreation E/not suitable, and Agriculture.

Outstanding waters: The highest level of water quality protection applies to certain waters that constitute an outstanding state or national resource. The State of Colorado Water Quality Control Commission has designated Spring Creek, Little Taylor Creek, and Rio Lado as "Outstanding Waters" to be maintained and protected at their existing quality. These streams are within the Dolores River Segment 5b and are within the analysis area. This anti-degradation designation was due, in part, to the presence of conservation populations of native cutthroat trout in the streams.

Impaired and potentially impaired waters: Stream segments that are not fully supporting their designated beneficial uses by exceeding one or more numeric or narrative Standards are defined as impaired and placed on the State's 303(d) List. McPhee Reservoir, located downstream from the RWD landscape, is listed as impaired for mercury in fish tissue. River Segment 9 of Silver Creek is also listed as impaired due to cadmium and zinc concentrations. The State of Colorado has cited natural geology and historic mining activities as the source of this impairment. All other stream segments within the RWD landscape are currently meeting water quality Standards for their designated beneficial uses.

Municipal Watersheds: *Forest Service Manual* 2542.05 defines a municipal supply watershed as one that serves a public water system as defined in Public Law 93-523 (Safe Drinking Water Act) or as defined in State safe drinking water regulations. The definition does not include communities served by a well or confined groundwater unaffected by Forest Service activities. The 1996 Safe Drinking Water Act (SDWA) Amendments established a new emphasis on preventing contamination through source water protection and enhanced water system management. The communities of Cortez, Dolores, and Dove Creek depend upon the Dolores River and McPhee Reservoir for municipal water supplies. The Town of Rico obtains its water supply from Silver Creek and a groundwater well along the Dolores River. Although most municipalities obtain their water from surface water sources, homeowner associations and campgrounds depend on groundwater for their supply.

3.4.1.5 Forest Plan Desired Conditions and Standards for Water Resources:

- Applicable Desired Conditions:
 - a. 2.6.1: State water quality Standards and anti-degradation rules are met and state-classified water uses are supported for all water bodies.
 - b. 2.6.3: State "Outstanding Waters" within the planning area maintain the high levels of water quality necessary for this status.
 - c. 2.6.5: Water from SJNF lands will meet applicable drinking water Standards when given adequate and appropriate treatment. Management activities throughout the

planning area protect and/or enhance the water quality of municipal supply watersheds (as defined in FSM 2542 for the USFS).

- d. 2.6.6: Stream channel types that naturally build floodplains are connected to their floodplains and riparian areas, maintain the ability to transport overbank flows (which occur on the average every 1.5 years), and are capable of transporting moderate or high flow events.
 - e. 2.6.7: Physical channel characteristics are in dynamic equilibrium and commensurate with the natural ranges of discharge and sediment load provided to a stream. Streams have the most probable form and the expected native riparian vegetation composition within the valley landforms that they occupy; they function correctly without management intervention
- Standards (pp. 65-66):
 - a. 2.6.29: Land use activities ... must not impact potentially useable groundwater quality or quantity to the extent that groundwater-dependent features are adversely affected. Examples of some groundwater dependent features are springs, seeps, fens, and intermittent or perennial streams.
 - b. 2.6.30: Activities must not be allowed within aquatic management zones that will cause a long term change from Desired Conditions. The protection or improvement of riparian values, water quality, aquatic community, and for long-term stream health in these areas must be emphasized. Aquatic management zones have a minimum horizontal width from the top of each bank of 100 feet of the mean height of the mature late-seral vegetation, whichever is greater.

Tables in the effects section below describe roads and trails within 100 feet of fens or wetlands for each Alternative.

3.4.1.6 Wetlands/Riparian Zones

Background information: Wetlands are areas that are saturated by surface or groundwater. Vegetation that grows in wetlands is typically adapted for life in saturated soil conditions. Riverine riparian areas, such as a stream bank, are a transition area between permanently saturated wetlands and upland areas. These areas can be detected on the landscape by their physical features and by their characteristic vegetation. Lands along perennially and intermittently flowing rivers and streams and the shores of lakes and reservoirs with stable water levels are typical riparian areas.

Stream health and assessment of riparian conditions: The discussion that follows describes the diversity of riparian habitats found across the RWD landscape and the stream health of the systems. Vegetation descriptions are taken from the *Field Guide to the Wetland and Riparian Plant Associations of Colorado* (Casey et al., 2003). Stream health is defined as the condition of a stream versus reference conditions for the stream type and geology (USDA Draft Technical Guidance Document for Determining

Stream Health, 2006). Reference condition refers to a minimally impaired site with the least number of anthropogenic influences occurring within an ecoregion. There are three stream health class definitions: robust, at-risk, and diminished. Robust stream health occurs when the stream exhibits high geomorphic, hydrologic, and/or biotic integrity relative to its natural potential condition (as represented by a suitable reference condition); at-risk stream health occurs when there is moderate integrity relative to its natural potential condition; and diminished stream health occurs when there is low integrity relative to its natural potential condition. Only a cross-section of the riparian resources present on the landscape was assessed for this analysis, and determination of stream health was based on:

- Proper Functioning Condition (PFC) Assessments (completed across the RWD landscape at various times in the past 15 years), and
- field review, site assessments, and photographs (taken by the hydrologist and other staff).

PFC is a qualitative survey used to assess the hydrology, vegetation, and erosional/depositional processes of riparian areas (BLM TR 1737-15, 1998; BLM TR 1737-16, 1999, Revised 2003). A rating of PFC means that all of the components (hydrology, vegetation, erosion/depositional features) are in place for the riparian area to function properly and nothing is threatening to degrade it. Riparian areas are rated PFC, Functional-At-Risk (FAR), or Non-Functional (NF).

Forest Service Region 2 Stream Health categories can be related to PFC ratings and visa versa. Stream health categories include descriptions of 'robust', 'at risk' or 'diminished'. Robust stream health class occurs when the stream exhibits high geomorphic, hydrologic, and/or biotic integrity relative to its natural potential condition (as represented by a suitable reference condition); at-risk stream health occurs when there is moderate integrity relative to its natural potential condition; and, diminished stream health occurs when there is low integrity relative to its natural potential condition.

Low-gradient headwater streams: Taylor and Stoner Mesas drop steeply down to the Dolores and West Dolores Rivers. On the mesa top are mostly low gradient swales that are saturated throughout much of the year. The saturated swales are characterized by a dense swath of mountain rush with minor amounts of species such as water sedge, beaked sedge, and common spikerush. Forb cover will be low. When altered, shrubby cinquefoil will dominate the site rather than rush and sedge, and species such as wild iris, dandelion, and Kentucky bluegrass will establish or increase if already present. Livestock grazing, dispersed camping, timber harvest and its associated road construction have taken place on the mesa tops. The streams in these areas are generally in either the robust or at-risk stream health category. A 2013 assessment of riparian features on Taylor Mesa noted that those with a downward trend had impacts from motorized recreational use⁶, wildlife use, and current livestock grazing. Livestock grazing was deemed to have the least impact on these riparian areas (Jensen, 2013).

⁶ Motorized recreation use in this assessment is a general term referring to illegal off-road use, off road parking for dispersed camping near riparian features, , and legal use of designated open roads or trails where the road or trail crossed riparian areas with poor alignment, or lacked recent maintenance of drainage structures.

Table 3-3 Stream Health for Low-Gradient Headwater Streams

Stream	Stream Health	Basis
Little Taylor Creek	robust	Proper Functioning Assessment
Fivemile Creek	At risk	Site visit (Vanderbilt)
Cabin Draw	At risk	Proper Functioning Assessment
Long Draw	At risk	Photo monitoring
Willow Creek (Fish Creek Watershed)	At risk	Site visit (Vanderbilt)

High-gradient streams: A number of high-gradient streams drop off from the mesas and the crest of the mountains. Ryman Creek and Johnny Bull are prime examples of these drainages, which are step-pool systems with narrow V-shaped valleys. For the most part, these valleys are evergreen riparian forests with only a small component of narrowleaf cottonwood. The overstory is dominated by blue or Englemann spruce with willow, red osier dogwood, and thinleaf alder in the shrub layer. The stream banks are often lined with thick mosses and a number of forb species such as bluebells and heartleaf bittercress. Aspect of the drainage and elevation influences plant associations. The riparian areas in the lower elevation drainages with southerly aspects, such as Tenderfoot and Schoolhouse Draw, are dominated by quaking aspen with abundant shrubs in the understory.

These drainages often contain trails, but other anthropogenic uses are uncommon due to the difficult access. These streams are generally in the “robust” health category.

Table 3-4 Stream Health for High-Gradient Streams

Stream Name	Stream Health	Basis
Tenderfoot Creek	Robust	Proper Functioning Assessment
Burnett Creek	Robust	Proper Functioning Assessment
Upper Wildcat	Robust	Site visit (Vanderbilt)
Little Bear	At risk	Proper Functioning Assessment
Lower Spring Creek	Robust	Interdisciplinary Team Field Trip and PFC
Rio Lado	Robust	Site visit (Vanderbilt)
School House	Robust	Site visit (Vanderbilt)

Barlow Creek, East Fork, Johnny Bull, Ryman Creek, and Scotch Creek were not evaluated through a formal assessment or site visit. Stream assessments on the Dolores District were prioritized to streams located in active grazing allotments or as a monitoring tool in vacant allotments.

Moderately steep, rocky canyons. Bear Creek, Stoner Creek, the lower end of Wildcat, and Fish Creek have lower gradient sections and can have well-developed floodplains and riparian areas that consist of narrowleaf cottonwood and several types of willow. Conifers range from a minor component of these systems to a primary component of the overstory. These streams are generally in the “robust” health category.

Table 3-5 Stream Health for Moderately Steep, Rocky Canyons

Stream Name	Stream Health	Basis
Bear Creek	Robust	Photo monitoring
Stoner Creek	Robust	Proper Functioning Assessment
Lower Wildcat	At risk – upward trend	Proper Functioning Assessment
Fish Creek	Robust	Field visit - Vanderbilt

Dolores and West Dolores Rivers: The Dolores and West Dolores Rivers flow through lands that are in both private and public ownership. The alluvial valley bottoms have been developed for residential purposes, used for rangelands and other agricultural uses, and have major highways and county roads along their lengths. Areas along these rivers that are publically owned are popular for dispersed camping and have been developed for campgrounds and forest access roads. The floodplains support cottonwood galleries, and abundant shrubs line the banks of the rivers. The natural meander pattern of the rivers has been interrupted for bridges and other development. Because of the degree of alteration in morphology and floodplain encroachment by roads and residential development, the health of these rivers could be described as ‘at-risk’.

Springs and wetlands: Springs, wetlands, seeps, fens, groundwater-fed streams and riparian areas are examples of groundwater-dependent ecosystems. Water beneath the land surface occurs in two principal zones: saturated or unsaturated. In the saturated zone, voids or spaces between grains of gravel, sand, silt, clay, and cracks within rocks are completely filled with water. The upper surface of the saturated zone is referred to as the water table or as an unconfined aquifer (Winter, 2002). An unconfined aquifer commonly exists close to the ground surface and the quantity of flow discharging from it can reflect recent climatic cycles. A confined aquifer is one that is bounded by confining layers of geology. The most significant confined aquifer system within the analysis area is the Dakota-Glen Canyon Aquifer (USGS, 1995). The geologic layers that comprise this aquifer system contain a series of aquifers and confining units.

In areas of steep land slopes, the water table sometimes intersects the land surface, resulting in groundwater discharge directly to the land surface. In the RWD landscape it is common to find wetlands and springs at the base of mountainsides.

Fens are a type of wetland with waterlogged substrates where at least 30 cm (approximately one foot) of peat has developed. Fens are dependent on groundwater and surface water inputs for water. Due to their great mass of water-holding organic matter, peatlands are exceptionally stable and may persist for centuries (USDA, 1998). In fact, peat accumulation rates have been found to be as slow as 20 cm per 1,000 years in many areas (Chimner & Cooper, 2002). Fens support a high concentration of rare and distinctive flora. They have been mapped within the analysis area, although it is important to recognize that mapping is not 100 percent complete and accurate.

The AWRA noted that the Upper Dolores River-Taylor Creek Watershed had the highest cumulative ranking on the SJNF for wetlands with a high potential to be influenced by anthropogenic activities (AWRA, Report 3 of 3, p.7).

Within the RWD landscape, 94 fens have been mapped. There are also 22 possible fens and 97 wetlands with unknown status within the landscape.

3.4.1.7 Forest Plan Standards for Riparian and Wetland Resources

There are many references to riparian and wetlands in the *Forest Plan*, a few of which are shown below (for a comprehensive list of *Forest Plan* direction, see the Watershed Report):

- Standards (p. 54):
 - a. 2.4.19: Long-term adverse effects to the hydrology, soils, and vegetation of fens and hanging gardens from management activities in or adjacent to them (including motorized travel, road construction....) must not occur.
 - b. 2.4.20: Agency actions in protected areas⁷ must not adversely affect the long-term ecological integrity of the riparian area and wetland ecosystems within them.
 - c. 2.4.21: Management actions must not cause long-term change away from Desired Conditions in riparian or wetland vegetation communities.
 - d. 2.6.30: Activities must not be allowed within aquatic management zones that will cause a long-term change from Desired Conditions. The protection or improvement of riparian values, water quality, aquatic community, and for long-term stream health in these areas must be emphasized. Aquatic management zones have a minimum horizontal width from the top of each bank of 100 feet or the mean height of the mature late-seral vegetation, whichever is greater.

Fens and wetlands within 100 feet of roads and trails are displayed in the table below, by Alternative.

3.4.1.7.1 Executive Orders 11988 and 119900

The objectives of Executive Order 11988, Floodplain Management, are to reduce the risk of flood loss and minimize the impact of floods on human safety, health, and welfare; to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains; to avoid direct or indirect support of floodplain development wherever there is a practicable Alternative; and to restore and preserve the natural and beneficial values served by floodplains.

Executive Order 11990 requires the Forest Service to take action to minimize destruction, loss, or degradation of wetlands and to preserve the natural and beneficial values of wetlands.

Effects to floodplains are described below.

⁷ Protected areas identified in the *Forest Plan* for the RWD area include the Colorado Roadless Areas, Grizzly Research Natural Area, and the Lizard Head Wilderness.

3.4.2 Effects of the Alternatives

3.4.2.1 Watershed

Current road densities for sixth-level subwatersheds in the RWD landscape meet *Forest Plan* Standard 2.13.27.

Table 3-6 Alternative A Road Densities for Sixth-level Subwatersheds in the RWD Landscape

Subwatershed Name	Miles of Level 2-5 Roads	Subwatershed Size on Forest Lands (mi ²)	Road Density (mi/mi ²)
Groundhog Creek	6.4	9.2	0.7
Fish Creek	34	35.8	0.95
Cottonwood Creek-West Dolores River	17.2	37.5	0.46
Stoner Creek	16	44.8	0.36
Taylor Creek-Dolores River	14.4	24.5	0.59
Johnny Bull Creek-West Dolores River	11.2	30.5	0.37
Headwaters West Dolores River	12.1	26.6	0.45
Priest Gulch-Dolores River	11.9	30.4	0.39
Cayton Valley-Dolores River	18.5	27.9	0.66
Headwaters Dolores River	9.5	25.9	0.37
Dolores River –Rico Valley	5.9	20.9	0.38
Scotch Creek-Dolores River	19.9	36.9	0.54
Roaring Fork Creek	17.6	19.6	0.9
Bear Creek	10.6	33.7	0.31
Headwaters Disappointment Creek	8.3	6.8	1.23
Headwaters Naturita Creek	4.5	12.8	0.35

All action Alternatives would lead to some decrease in road miles, which would benefit watershed health to some degree.

In addition, none of the sixth-level watersheds within the RWD landscape were identified as being within “the most sensitive to anthropogenic activities” category; therefore, the proposed project complies with *Forest Plan* guideline 2.2.76.

3.4.2.2 Water Quality

a. Sediment:

The water quality parameter most likely to be affected by roads and motorized trails is sediment. The Colorado Division of Water Quality requires surface waters to be “free from substances attributable to human-caused point source or nonpoint source discharge ... which can settle to form bottom deposits detrimental to the beneficial uses. Depositions are stream bottom buildup of materials which include...silt or mud” (CDH&EQ, 2013).

Rainstorm events and intercepted spring water can result in water flowing down roads and trails. The water entrains sediment from the route surface. The risk of sediment being deposited into the drainage network is highest where routes are located near or cross streams.

Also, crossings that are poorly designed or located in sensitive stream types can increase the likelihood of channel instability.

The following table shows the number of perennial and intermittent streams crossed by roads and motorized trails under each Alternative. It also shows the miles of roads and motorized trails that are within 100 feet of intermittent and perennial streams. Maintenance Levels 1-5* and 2-5* are displayed. If they have been closed properly, ML1 roads are not as likely to introduce sediment to the stream network as open roads are.

Table 3-7 Stream Crossings by Roads and Motorized Trails per Stream Mile and Miles of Motorized Roads and Trails within 100 Feet of Streams

Alternative	Stream Crossings by Roads per Stream Mile	Stream Crossings by Motorized Trails per Stream Mile	Miles of Roads within 100' of Streams	Miles of Motorized Trails within 100' of Streams
Alt. A	1-5* = 0.35 2-5 = 0.23	0.16	1-5 = 28.9 2-5 = 19.1	19
Alt. B	1-5 = 0.30 2-5 = 0.22	0.11	1-5 = 25.6 2-5 = 19.2	13.8
Alt. C	Same as B	0.16	Same as B	16.7
Alt. D	Same as B	0.09	Same as B	10.6
Alt. E	Same as B	0.06	Same as B	8.6

Currently, the waters within the RWD Landscape meet water quality Standards for sediment. All action Alternatives would reduce the risk of sediment delivery to the stream network by reducing the road/stream intersections and by reducing the number of miles of roads near streams. In terms of the road network, there is no difference between the action Alternatives (Alternatives B, C, D, and E).

Miles of single-track trail where motorcycle use is removed contribute to the reduction shown in the table above. However, with the exception of the section of Ryman Trail that has been decommissioned, there would still be a trail present within the 100' zone, but the user group would be changed. Although motorized single-track trail miles would be reduced, the number of miles of 62-inch trails would increase under the action Alternatives and has been accounted for in the totals.

At the watershed scale, the action Alternatives would each deliver about the same amount of sediment to the stream network. Additionally, trail design and mitigation listed in Appendix B would apply to all the action Alternatives.

None of the Alternatives would have an impact on the impaired waters of Silver Creek and McPhee Reservoir, located downstream from the analysis area. (Listings are for cadmium/zinc

and mercury, respectively.) The proposed activity would not increase pollutants to waterbodies in the analysis area.

All Alternatives for this proposed project meet *Forest Plan* Desired Conditions for meeting state water quality Standards and anti-degradation rules (2.6.1), protecting and/or enhancing the water quality of municipal supply watersheds (2.6.5), and physical channel characteristics are in dynamic equilibrium and commensurate with the natural ranges of discharge and sediment load provided to a stream (2.6.7).

Road/stream crossing and miles of road in proximity of streams do not vary between the action Alternatives.

When it comes to trails, Alternative E has the fewest number of stream crossings and 100' proximity, followed by Alternative D. Alternatives B and C have fewer stream crossings and 100' proximity than Alternative A, but more than Alternatives D and E. Single-track trails will be present even if the type of use changes. Of the action Alternatives, B and C add the most new stream crossings or 100' proximity because of the new 62-inch trails.

b. Outstanding Waters:

Spring Creek is the only outstanding water affected by the project proposal. The trail is in Morrison geologic formation for most of its length. This is a parent material that weathers to form a clay soil texture with very little to no surface rock. The trail is currently closely aligned to Spring Creek for approximately 1.7 miles of its length. NFSR 547 is located in the Morrison Formation and the northeast portion past the stream crossing is in the vicinity of numerous springs and spring brooks which fed into Spring Creek. An interdisciplinary team field trip to Spring Creek was conducted on August 27th, 2015.

Alternative A: Under this alternative, Spring Creek would probably continue to meet the outstanding waters designation since conditions along the stream would not change. FSR547 stream crossing would not be removed reach and would continue to alter spring flows into the stream from the north east side of the crossing. This alternative meets Forest Plan Standard 2.6.3.

Alternative B: Alternative B maintains nonmotorized recreation use and current alignment of the trail. Increased use of the trail would not be anticipated and the stream would continue to be in robust stream health since conditions along the stream would not change. Under this Alternative, FSR547 would be terminated prior to the stream crossing and made into a non-motorized trail. This would result in restoration of the channel morphology where the road is currently located and improved spring flows into the stream. Both of these factors would improve the overall health of the stream in this stream reach. Under this Alternative, Spring Creek would continue to meet the outstanding waters designation and would benefit from the change to FSR547. Forest Plan Standard 2.6.3 would be met.

Alternatives C: Under Alternative C, motorcycle use would occur on the northern 1.5 miles of the Spring Creek trail in its current alignment, then an alternate route would be created using the Pothole Road to connect to FR692. Although the alternate alignment reduces use on portions of the trail along the creek, it would not fully mitigate potential impacts. Alternative C

provides a motorcycle connection between the mesas that would greatly increase the trail use as well as adding a user group to a portion of the trail. This in turn would lead to increased erosion on the Spring Creek Trail given the poor bearing capacity of the clay soils in the area. Research has shown that motorcycles are more destructive on grassy slopes than either horses or hikers (Weaver, 2015). In addition, motorcycles tend to form a narrow rut in clay soils under wet conditions or when ridden up steep slopes that require throttling. Both of these conditions are present along the Spring Creek Trail, due to the presence of springs and wetlands. Once a rut is formed, funneled water causes more trail entrenchment leading to an ongoing cycle of erosion. Under its current alignment and tread construction, it is very likely that trail sediment would be introduced into Spring Creek under this increased use scenario and this would violate the antidegradation designation. However, if the current trail tread is reconstructed, realigned to avoid springs and riparian area, and maintained, then it would not impact the outstanding waters designation. Measures would include, but not be limited to: installment of appropriate cross drainage, re-alignment away from springs, the riparian area and stream, and reduction of trail slopes by adding switch backs.

Under this Alternative, FSR547 would be terminated before the Spring Creek Crossing. This would result in restoration of the channel morphology where the road was located and improved spring flows into the stream. Both of these factors would improve the overall health of the stream in this stream reach and would enhance the outstanding waters designation.

Although the portion of stream near FSR547 maintains or improves outstanding water designations the portion of trail along the creek with motorcycle use would detract from the outstanding water designation and would not meet Forest Plan Standard 2.6.3 under this Alternative.

Alternative D The effects of this Alternative are the same as for C.

Alternative E The effects of this Alternative are the same as for C.

3.4.2.3 Wetlands, Fens, and Riparian Areas

Wetlands and fens are indirectly impacted by roads and trails by increased sediment deposition routed from a nearby travel surface. A nearby route can indirectly alter the hydrology of a fen or wetland by changing the flow paths of surface water into a wetland or by creating rills that headcut into a wetland and cause dewatering. Wetlands can be directly impacted by a route traversing through the wetland without a sustainable surface. In this case, ruts form that can alter hydrology and drain the wetland. Springs and associated spring brooks are similarly affected by poorly or improperly designed trails.

Compliance with *Forest Plan* Standards 2.4.19, 2.4.20, and 2.4.21 will be tracked through the Alternatives. Also, specific roads and trails that were identified internally and through public scoping as having riparian and wetland issues will be discussed and tracked through the Alternatives. These areas include: fens and wetlands in the north Calico NRT and Winter Trail areas, Bolam Pass, Fish Creek, and Lone Cone riparian areas.

a. **Forest Plan Standards for Fens:**

Standard 2.4.19 states that “long-term adverse effects to the hydrology, soils, and vegetation of fens and hanging gardens from management activities in or adjacent to them (including motorized travel, road construction, water pumping, and peat removal) must not occur” (USFS, 2013, p. 54). The likelihood of long-term adverse effect to a fen is higher when a road or trail crosses or is close to a fen. The water influence zone next to wetlands and riparian areas occurs within 100’ of each side of the waterbody. The water influence zone is important for protection of interacting aquatic, riparian, and upland functions by maintaining natural processes and resilience of soil, water, and vegetation (FSH 2509.25).

For this analysis, mapped fens within 100’ of roads were considered likely to show impacts and possibly long-term adverse effects from a road. Although the hydrologist and other District personnel conducted field trips to numerous fens within the analysis area⁸, the mapped fen GIS layer may contain errors, since some fens might have been missed. Also, the fen status of all wetlands has not been verified at this time. Wetlands that still need field verification to determine whether they are fens are included in the analysis and are explicitly referred to as “unverified fens.” This analysis contains the best information available at this time.

Proximity to Roads

Under Alternative A, 19 mapped fens and 17 unverified fens are within 100’ of Forest ML1-5 roads⁹. Under the action Alternatives, road decommissioning of ML1 roads would reduce the number to 15 unverified fens within 100’ of Forest system roads.

⁸ District staff visited Barlow Creek and Bolam Pass on July 28, 2015; north Calico Trail on August 14, 2015, and on September 10, 2015; Taylor Mesa on June 6, 2014; and Tin Can Basin and FR149 on October 15, 2015.

⁹ The GIS road query for this analysis was run for ML1-5 roads; however, there are no ML5 (paved) roads in the analysis area. FR533 is coded in the data as an ML4 but would be reduced to an ML3 under all alternatives.

Table 3-8 Roads within 100 feet of Mapped Fens and Unverified Fens by Alternative

		Mapped Features within 100' of Forest Roads		Maintenance Level	
Road	Road Name	Fens	Unverified Fens	Alternative A	Action Alternatives
149	Blackhawk		1	1	1
536	Center Drive		1	1	Decom.
436C	Hillside Drive C	1		1	1
436B	Hillside Drive B	1		1	1
210	Fox Den		3	1	1
547A	Taylor Mesa A		1	1	Decom.
547C	Taylor Mesa C		1	1	1
692A	Pothole A		1	1	1
Total ML1 Roads		2	8		
578	Hermosa Park	5		2	2
149	Blackhawk	3		2	2
534	Lone Cone		1	2	2
403	Groundhog Point		2	2	2
436	Hillside Drive	1	2	2	2
555	Hell Canyon		1	2	2
533	Groundhog		3	3	3
436	Hillside Drive	4		3	3
611	Black Mesa	1		3	3
545	Taylor Creek	4		3	3
Total ML2-5 Roads		18	9		
Total ML1-5 Roads		20	17		

For all Alternatives, there were 18 mapped fens within 100' of ML2-5 roads. Thirteen of these fens are within 100' of the Hermosa Park Road, Hillside Drive, and Taylor Creek Road. A total of 27 fens/unverified fens are within 100' of ML2-5 roads for all Alternatives.

Ten fens/unverified fens are within 100' of ML1 roads under Alternative A, and 8 fens/potential fens are within 100' of ML1 roads under Alternatives B-E. Currently, these roads are not used and, if they were closed properly, should not be adversely affecting fens.

Proximity to Trails

Several motorized trails are also within 100' of mapped fens. High-density wetland/fen areas described in detail in this DEIS, such north Calico, Fish Creek, Lone Cone, and Tin Can Basin are not displayed in this table and are described separately later in this section.

Table 3-9 Trails within 100 feet of riparian or wetlands

Trail Number	Trail Name	Mapped Features within 100 feet of the trail		X' indicates that the trail would be located within 100 feet of Fen/unverified fens by alternative				
		Fens	unverified fens	Alt A	Alt B	Alt C	Alt D	Alt E
	Groundhog OHV		1		x	x	x	x
	Pothole Singletrack		1			x	x	x
211	South Calico Singletrack		3	x	x	x	x	x
202	Winter Trail Singletrack	1		x	*	*	*	*
638	East Fork Dolores Singletrack	3		x				
435	Rough Canyon Singletrack	1		x	x	x	x	x
* Trail would continue to be in the same location, near a fen, but would be non-motorized								

The GIS query for this table included a section of the East Fork trail that displays on trail maps but is no longer used. This segment would not be redesignated as a trail for any type of use under the action Alternative so it is shown blank in the Table.

Design Features

In order to avoid adverse effects to fens and unverified fens, the following measures would be required under all Alternatives (also listed in Appendix B):

- ML1 roads within 100' of fens/unverified wetlands would likely require realignment if/when they are opened for use in the future.
- ML2-5 roads within 100' of fens should be evaluated to determine if they are adversely effecting fens.
- Stabilization of fens adversely affected by ML2-5 roads and reversal of long-term adverse effects would be necessary.
- New motorized trails would be constructed to avoid long-term adverse impacts to fens and wetlands.
- Existing motorized trails would be evaluated to determine whether they are adversely affecting fens.
- If existing motorized trails are adversely affecting fens, then trail realignments or trail reconstruction and/or fen stabilization would be necessary to restore fen ecosystem health.
- closure to dispersed camping within mapped fens.

Effects of Roads and Trails

The following discussion applies to the roads and trails listed in the tables above and assumes implementation of the project Design Features:

Alternative A: Under this Alternative, no new motorized trails would be constructed. If the above conditions are adhered to, this Alternative would comply with *Forest Plan* Standard 2.4.19.

Alternative B: This Alternative would reduce by two the number of ML1 roads within 100' of fens and would realign and decommission the portion of the East Fork Trail that bisects fens. Therefore, Alternative B would reduce the potential for adverse long-term effects to fens. It would also remove motorized use from Winter Trail, which would remain in the same location. Removing this use would likely reduce the wear and tear on current Trail structures and drainage features, which is critical to prevent long-term adverse impact on the nearby fen. Alternative B would open the trails to motorized use on July 1, which in most years would allow conditions to dry out and thereby limit trail damage. This would benefit fens and wetlands by reducing the potential for trail braiding and the risk of short-term adverse impacts. For these reasons, this Alternative would be preferable to the existing situation (Alternative A) in regard to fens and would benefit fens more than any of the Alternatives. If the bulleted conditions above are adhered to, this Alternative would comply with *Forest Plan* Standard 2.4.19.

Alternatives C, D, and E: The effects of these Alternatives are similar to Alternative B except that the motorized trails would be open to motorized uses on June 1. If the bulleted conditions above are adhered to, these Alternatives would comply with *Forest Plan* Standard 2.4.19.

b. *Forest Plan* Standards and Guidelines for Riparian Areas and Wetlands (excluding Fens)

This section describes riparian areas and wetlands mapped in the Forest's vegetation database and addresses Standards 2.4.20, 2.4.21, and 2.6.30. Although there may be some overlap, this GIS layer is separate from the fen/unverified fens layer because because riparian vegetation includes areas that don't meet the definition of a fen.

2.4.20: Agency actions in protected areas must not adversely affect the long-term ecological integrity of the riparian area and wetland ecosystems within them.

2.4.21: Management actions must not cause long-term change away from Desired Conditions in riparian or wetland vegetation communities.

2.6.30: Activities must not be allowed within aquatic management zones that will cause a long-term change from Desired Conditions. The protection or improvement of riparian values, water quality, aquatic community, and for long-term stream health in these areas must be emphasized. Aquatic management zones have a minimum horizontal width from the top of each bank of 100 feet of the mean height of the mature late-seral vegetation, whichever is greater.

Standard 2.4.20 in the *Forest Plan* refers to protected areas. Within the RWD analysis area protected areas include the Lizard Head Wilderness, Grizzly RNA, and Colorado Roadless Areas. No roads currently exist in the RWD protected areas. There are currently 7.4 miles of motorized trails within 100 feet of riparian areas and wetlands within the Colorado Roadless Areas.

Roads and trails have historically been located along streams and frequently have crossed wetlands and springs.

No new roads within 100 feet of riparian areas or wetlands are proposed under any Alternative. Under the existing condition and the action Alternatives, there is no significant difference in the ML2 and ML3 roads that are within 100 feet of mapped riparian areas. However, proposed decommissioning of ML1 roads under all action Alternatives would remove roads from approximately 2 miles of mapped riparian areas.

The hydrologist and other interdisciplinary team members conducted a number of field trips¹⁰ to evaluate impacts to riparian areas from the motorized road and trail system.

Although most changes proposed in the action Alternatives entail type of trail use rather than physical alignment, a few new trails and trail changes would place trails within 100 feet of mapped riparian areas or wetlands. Table 3-10 below displays the differences between Alternatives in regard to motorized trails and mapped riparian areas and wetlands. Tenderfoot trail is an existing trail but is included in this table because the addition of motorized uses would entail considerable reconstruction in order to withstand additional traffic. The current alignment of the trail is steep and highly connected to the stream channel which is not too problematic due to the light use it receives by hikers and horseback riders.

Table 3-10 Differences between Alternatives in Regard to Motorized Trails within 100' of Riparian Areas and Mapped Wetlands

Trail	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Details
Groundhog OHV		x	x	x	x	2 stream crossings, within 100 feet of unverified wetland, goes through 1000 feet of riparian area.
Rio Grand Southern			x	x	x	4 stream crossings, within 100 feet of riparian for 1.5 miles within the roadless area
Taylor OHV		x	x	x	x	within 100 feet of 1 wetland
Tenderfoot			x			19 stream crossings, within 100 feet of Tenderfoot Creek for 2.9 miles, 5280 feet of trail within 100 feet of riparian area within the roadless area
East Fork Dolores	x					reroute trail and close section that crosses wetland/fen complex

As with fens and unverified fens, measures are necessary to mitigate impacts to riparian areas and wetlands, especially those that fall within protected areas identified in the *Forest Plan*.

The Design Features described above for fens and unverified wetlands would also be followed for riparian areas and wetlands. In addition:

¹⁰ Field trips were conducted on August 21, 2013, to Bear Creek; on September 19, 2013, to Ryman Creek Trail; on July 17, 2014, to the Lone Cone area; on July 18, 2014, to Fish Creek and Groundhog; on September 4, 2014, to Fish Creek and Willow Creek; on September 22, 2014, to Barlow Road and FR149; on October 17, 2014, to Trail; on June 19, 2015, to dispersed campsites along the West Fork of the Dolores River; and on September 1, 2015, to Burnett Trail and the proposed Galloping Goose Trail.

- Existing motorized trails within *Forest Plan*-protected areas (CRAs) would be evaluated to determine whether they are adversely affecting wetlands and riparian areas.
- If existing motorized trails within *Forest Plan*-protected areas (CRAs) are adversely affecting wetlands and riparian areas, then trail realignments, trail reconstruction, or resource stabilization would be necessary to restore the health of riparian/wetland ecosystems.

3.4.2.4 *Effects of Alternatives by Sub-Area*

The discussion below focuses on areas within the RWD analysis area where riparian and wetland issues were a factor in Alternative development or where there would be a substantial difference between the Alternatives in regard to riparian areas and wetlands. Not all riparian/wetland areas are discussed. The highlighted riparian/wetland areas are organized by geographic sub-area. Sub-areas are described in Appendix C.

3.4.2.4.1 Sub-Area 1

Alternative A: Currently, system and unauthorized roads in the Fish Creek and Lone Cone areas are impacting riparian areas and wetlands. In the Fish Creek area, recreationists are driving OHVs between FR305 and FR404, leaving vehicle tracks through an extensive willow carr and beaver dam system as well as sedge-dominated wet meadows. In this area, Fish Creek is dependent upon riparian vegetation for streambank stability and is very sensitive to vehicle impacts. If unauthorized routes continue to increase in number and use, a departure from Desired Conditions would be anticipated.

In the Lone Cone area, FR534 became impassable and use has shifted to an ML1 road (FR534H), which, combined with user-created routes, connects to the northeast side of the Forest. Unfortunately, FR 534H goes directly through wetlands, causing alteration of the hydrology in the area as well as impacts to the wetland ecosystem.

In these areas, this Alternative would not meet *Forest Plan* Standards 2.4.21, 2.4.20, or 2.6.30.

Alternative B: Under this Alternative, the Forest Service road system in both the Fish Creek and Lone Cone areas would be developed to avoid and minimize impacts to riparian/wetland areas. This would deflect unauthorized use from occurring in the sensitive wetland and riverine areas in the Fish Creek area. Reconstruction of FR534 in the Lone Cone area would halt the pioneering of routes through wetlands. Loops in the Lone Cone area would provide recreational opportunities in appropriate locations.

This Alternative would meet *Forest Plan* Standards 2.4.21, 2.4.20, and 2.6.30 as well as applicable watershed conservation practices in these areas.

Alternative C Same as Alternative B.

Alternative E Same as Alternative B.

3.4.2.4.2 Sub-Area 2

See the Sub-Area 5 description below for a discussion of Winter and Calico Trails.

3.4.2.4.3 Subarea 3

See the Spring Creek discussion above, under the Outstanding Waters heading.

3.4.2.4.4 Subarea 4

See the Tenderfoot Creek discussion above.

3.4.2.4.5 Subarea 5

The northernmost 4 miles of the North Calico NRT and Winter Trails traverse an area containing many wetlands, fens, streams, and springs. Most of the North Calico NRT is within the roadless area and, as such, is considered a protected area. Therefore, *Forest Plan* Standard 2.4.20 would apply.

Wetland soils are organic soils and have very little bearing strength. These soils are fully saturated most of the growing season, which further reduces their structural stability. Several different trail construction techniques have been utilized in this area to minimize damage to the resource while providing a sustainable trail tread. Unfortunately, untreated sections of trail still exist, so rutting and trail braiding through and on the edge of wetlands has occurred. A destructive cycle of degradation is apparent at unstabilized sites, including widening of the trail surface as users avoid degraded surfaces and the development of multiple parallel trails. This is most obvious along the northernmost 4 miles of North Calico NRT, but examples also exist along Winter Trail.

Alternative A: Under this Alternative, the North Calico and Winter Trails would remain motorized single-track trails with minimal realignment locations. Also, there would be no timing restriction placed on the trails. As the status quo Alternative, trail realignment and developments could be expected to occur through the trail maintenance program that would reduce trail-related impacts to riparian and wetland ecosystems. In order to address immediate problem spots on North Calico NRT, emergency temporary closures could be placed on the trail until such time as the problem sections are corrected. If these actions were taken, including efforts to harden areas that traverse wetlands and realign short sections of trail, this Alternative could meet *Forest Plan* Standards 2.6.29, 2.4.19, 2.4.20, and 2.6.30. A major realignment of North Calico NRT would not occur under this Alternative, so frequent maintenance would be necessary. If trails are properly installed and frequently maintained, wetland ecosystem health could be maintained and wetlands would not be adversely impacted. Monitoring would be necessary to ensure that riparian/wetland areas are moving toward Desired Future Conditions.

Alternative B: For North Calico NRT, a single new alignment for all user groups would avoid wetlands/fens/springs or would be reconstructed with new trail developments¹¹ to not adversely impact wetlands/fens/springs. Sections of the old alignment would be abandoned and reclaimed. The Trail would also be closed to motorized uses until July 1, which would increase the likelihood that it would be drier and less susceptible to damage. Winter Trail would be closed to motorized use, thus reducing user group pressure. However, maintenance to harden areas going through wetlands on Winter Trail would still be necessary, since the Trail would be open to hikers and horseback riders. Although fairly frequent maintenance would still be necessary, the new trail layout and design including alignment and trail developments might reduce the amount required. Temporary closures to address immediate problem spots could be undertaken before implementing the new alignment.

Forest Plan Standards 2.4.19, 2.4.20, 2.6.29, and 2.6.30 would be met under this Alternative, moving riparian/wetland areas toward Desired Future Conditions more quickly than under Alternatives A or C.

Alternative C: Impacts to riparian/wetland areas on North Calico NRT under Alternative C would be similar to those under Alternative A. Impacts to riparian/wetland areas on Winter Trail would be similar

¹¹ Bridges, turnpikes, trail surfacing and hardening, and wetland stabilization are examples of trail developments.

to those under Alternative B. North Calico NRT would be open to motorized uses on June 1, when soil conditions are typically still wet and short-term impacts to wetlands and riparian areas would be more likely than under Alternative B. Assuming that efforts to harden areas that traverse wetlands, additional trail developments, and short sections of trail realignment would occur, this Alternative could meet *Forest Plan* Standards 2.4.19, 2.4.20, 2.6.29, and 2.6.30. If the trails are properly installed and maintained, wetland ecosystem health could be maintained and wetlands would not be adversely impacted. Monitoring would be necessary to ensure that riparian/wetland areas are moving toward Desired Future Conditions.

Alternative D: On North Calico NRT, this Alternative would be similar to Alternative A in terms of impacts to riparian/wetland areas. It would be similar to Alternative B in terms of impacts to riparian/wetland areas on Winter Trail.

Alternative E: North Calico and Winter Trails would be closed to motorized use, reducing user group pressure. However, maintenance to harden areas going through wetlands would still be necessary, since these Trails would be open to mountain bikers, hikers and horseback riders. *Forest Plan* Standards 2.4.19, 2.4.20, 2.6.29, and 2.6.30 would be met under Alternative E.

3.4.2.4.6 Subarea 6

No highlighted areas.

3.4.2.4.7 Subarea 7

Alternative A: Under this Alternative, FR578B and FR578B1 would be open ML2 roads across an area of numerous springs, seeps, small streams that feed into a large wetland and fen complex. These native surface roads tend to develop a series of deep mudholes along their length due to the organic soils; this, in turn, leads to periodic braiding of travel routes. Because of the remoteness of FR578B and FR578B1, road maintenance has historically been very infrequent and would continue to be infrequent. Although FR578B and FR578B1 do not have a direct adverse impact on the fen and wetland complex, it is possible that they indirectly affect the wetland complex by diminishing water quality and the quantity of surface and groundwater inputs. Under this Alternative, the road would be closed at the junction with the East Fork Trail. Even though the MVUM has displayed this as a closure for many years, a physical closure on the ground has not existed and the road has been utilized beyond this point down to the East Fork Creek. A physical closure at this point would benefit riparian and wetland resources.

The removal of the unused section of the East Fork Trail from the fen and wetland complex would also greatly benefit the wetland/fen. *Forest Plan* Standards 2.4.19, 2.4.20, 2.6.29, and 2.6.30 would likely be met under this Alternative, although riparian/wetland/fen areas would not be as likely to move toward Desired Future Conditions as they would under Alternatives B, C, D, and E.

Alternative B: Under this Alternative, FR578B and FR578B1 would be closed near the junction with FR534 and converted to a motorized trail. The removal of full-size vehicles from this route and the narrowing of the roadbed would be beneficial to the springs/seeps and small streams that feed the fen and wetland complex. The motorized Trail would be constructed to avoid long-term adverse effects to springs/seeps/wetlands and would not be open for use until July 1, increasing the likelihood that it would be drier and less susceptible to damage. The removal of the unused section of East Fork Trail from the fen and wetland complex would also greatly benefit the wetland/fen. Alternative B would be

more likely to meet *Forest Plan* Standards 2.4.19, 2.4.20, 2.6.29, and 2.6.30 than would Alternative A. It would also move riparian and wetland resources toward Desired Future Conditions faster than Alternatives A or C would.

Alternative C: This Alternative would be the same as Alternative B except that East Fork Trail would be open to motorized use on June 1. This would increase the likelihood of short-term impacts to wetlands due to wetter trail conditions. This Alternative would be more likely to meet *Forest Plan* Standards 2.4.19, 2.4.20, 2.6.29, and 2.6.30 than would Alternative A. However, it would not move riparian and wetland resources toward Desired Future Conditions as quickly as Alternative B would, due to its earlier “on” date for motorized uses.

Alternative E: This Alternative would be the same as Alternative B except that East Fork of the Dolores Trail would be nonmotorized. This Alternative also includes removal of the unused section of East Fork Trail through a wetland/fen complex. *Forest Plan* Standards 2.4.19, 2.4.20, 2.6.29, and 2.6.30 would be met under this Alternative. Removal of motorized uses from East Fork Trail would reduce user group pressure, which would benefit riparian and wetland resources. Alternative E would move riparian and wetland resources toward Desired Future Conditions more quickly than Alternatives A, B, or C would.

3.4.2.4.8 [Subarea 8](#)

See the Soils and Geology section for a discussion of Ryman Creek.

3.4.2.4.9 [Subarea 9](#)

There are no highlighted riparian/wetland areas of concern in this subarea.

3.4.3 Cumulative Effects

Activities that could combine with the action Alternatives to result in a cumulative effect include ongoing livestock grazing, timber harvest (within the recent past as well as future harvest within the next five years), and a multitude of recreation uses such as dispersed camping, hiking, biking, outfitter guides, and special uses.

This analysis will focus on the two sixth-level watersheds identified in the *Forest Plan* Aquatic, Riparian, and Wetland Ecosystem Assessment that were determined to be in the “highest level of anthropogenic disturbance” category. These were the Upper Dolores River-Taylor Creek and the Cottonwood Creek-West Dolores River Watersheds.

Upper Dolores River-Taylor Creek Watershed

Under all the action Alternatives, no new roads are proposed, and approximately 2 miles of ML1 roads have been identified for decommissioning. Loading Pen Trail would be converted from a nonmotorized Trail to a motorized Trail within the watershed under Alternatives C, D, or E.

The Taylor Mesa Allotment would continue to graze livestock. A 2013 assessment of riparian conditions in this Allotment found an overall upward trend, and therefore current livestock management is appropriate (Jensen, 2013).

Proposed activities that could occur within five years include timber harvest of aspen and spruce/fir. Most of this vegetation management project will take place within the Stoner Watershed, with minor amounts possible within the Upper Dolores River-Taylor Creek Watershed.

In general, the action Alternatives propose small changes to the road and trail network within this Watershed, and decommissioning ML1 roads would be a benefit to watershed resources. Some portions of Loading Pen Trail would need to be improved under Alternative C, D, or E to handle the increased motorized traffic and to avoid soil erosion.

Cumulative impacts to soils and watershed values are not anticipated with any of the action Alternatives.

Cottonwood Creek-West Dolores River Watershed

Under all action Alternatives, no new roads are proposed and approximately 1.5 miles of ML1 roads have been identified for decommissioning. No changes to the motorized trail network are proposed under any action Alternatives within this Watershed.

Portions of nine active cattle allotments are within the Cottonwood Creek-West Dolores River Watershed, with the Twin Springs and Stoner Allotments being the main ones within the RWD analysis area.

There are no known projects proposed within the Watershed at this time.

In general, the action Alternatives propose very few changes to the road and trail network within this Watershed, and decommissioning ML1 roads would be a benefit to its resources. The RWD alternatives would not alter the current patterns of recreation in the area so that there should not be a change from the existing condition. Cumulative impacts to soils and watershed values are not anticipated with any of the action Alternatives.

3.5 FISHERIES

3.5.1 Affected Environment

This section describes affected environment for threatened, endangered, sensitive and management indicator species followed by comparison of the alternatives. This organization was chosen because cutthroat trout fall under multiple categories. The following paragraphs refer to three different types of cutthroat trout 1) greenback lineage 2) Colorado River lineage and 3) hybridized cutthroat trout.

3.5.1.1 Threatened and Endangered Species

There are five listed aquatic species that occur on the SJNF or may be impacted by projects on the SJNF (USDI 2015): bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), razorback sucker (*Xyrauchen texanus*) and the greenback lineage cutthroat trout (*Oncorhynchus clarki stomias*). Activities that result in water depletions on San Juan National Forest Lands can have an adverse effect on the Colorado pikeminnow, razorback sucker, humpback chub and bonytail which reside in rivers downstream from the analysis area in the Dolores and Colorado Rivers. There are no water depletions associated with the project therefore there is no anticipated effect under any alternative to these four downstream listed fish species. They will not be discussed further in this DEIS.

Greenback cutthroat trout is a threatened species that does occur within the RWD area. Known populations of genetically pure (>99% or better) greenback lineage cutthroat trout are located in Spring Creek, Rio Lado Creek, Roaring Fork Creek, Rough Canyon Creek, Priest Gulch, and Little Taylor Creek.

The following stream systems are identified with greenback lineage cutthroat populations present. These fish may be present in the main stem of these streams or in isolated populations within stream tributaries. Roaring Forks and Rough Canyon creeks are included together and will be discussed as one population because the known population of greenback lineage cutthroat were discovered near the confluence of Roaring Forks and Rough Canyon creeks. It is thought that these fish functionally operate as one population and regularly migrate between these two creeks.

Table 3-11 Streams with motorized trails present by Alternative

Stream area name	Roads or motorized trails present in any alternative?	Which Alternatives
Spring Creek	Yes	1.5 miles in Alternatives C, D and E.
Rio Lado	No	N/A (not discussed further)
Little Taylor	No (FR545 located across and upslope from confluence with Taylor Creek)	N/A (not discussed further)
Stoner Creek	Yes	2 miles of this trail parallel the creek in all Alternatives
Roaring Fork Creek and Rough Canyon Creek	Yes	2 miles of the Rough Canyon trail and approximately 4 miles of the Roaring Fork road in all alternatives
Priest Gulch	Yes	Approximately 5 miles of the Priest Gulch trail all alternatives

3.5.1.2 Sensitive Species

For the SJNF, four fish species are designated as sensitive: Colorado River lineage cutthroat trout (CRCT), flannelmouth sucker, bluehead sucker, and roundtail chub. None of these four species is known to occur within the project area or has the potential to be impacted by this project, therefore they are not discussed further.

3.5.1.3 Management Indicator Species

MIS species are brook, brown, cutthroat, and rainbow trout. Although the Colorado River cutthroat trout is a USFS and BLM sensitive species and greenback cutthroat trout is a Federally Listed fish species, they are also listed as MIS fish and will be analyzed with hybridized cutthroat trout in the MIS report. The brook, brown, hybridized cutthroat, and rainbow trout are listed as MIS due to their recreational and economic value. Brook, brown, rainbow and hybridized cutthroat trout occur in many of the perennial streams in the RWD area as well as the planning unit.

3.5.2 Effects of Alternatives

Upland effects to watersheds is described in the Watershed section of this DEIS. Route densities are currently within guidelines outlined in the Forest Plan. All action alternatives would lead to some decrease in road miles and this would benefit watershed health to some degree. In addition, none of the sixth level watersheds within the RWD Landscape were identified as being within “the most sensitive to anthropogenic activities” category.

Under all alternatives there are no long term alterations in stream flow, water depletions or changes to stream temperature. Trees, shrubs and down woody material are not affected and streamside vegetation remains mostly intact except for short-term disturbance for road or trail construction at localized stream crossings.

3.5.2.1 *Spring Creek*

Effects to Spring Creek in terms of potential for sediment production is described in the Water Quality section above. To summarize, Alternative B provides the best long term conditions for fish habitat compared to C, D and E. Alternatives C, D and E would require mitigation measures to provide the increase trail use that would occur from an additional user group (motorcycles) and a trail connection between Stoner and Taylor Mesas.

All of the Action alternatives propose changing the terminus of FR547, removing the road culvert that currently crosses Spring Creek, and converting the road to a motorized single track trail connected to the existing Spring Creek trail. Removal of the road culvert creates short-term sedimentation and disturbance effects to cutthroat trout followed by a long-term improvement in habitat conditions and connectivity. Culvert removal would be directed by the Fisheries Biologist to take measures to minimize short term disturbance to individual fish at the crossing site.

Long term improvement to fish passage on Spring Creek would result from the culvert removal.

3.5.2.2 *Roaring Fork and Rough Canyon*

Under all Alternatives FR435 Roaring Fork road remains in its current location as a ML3 road located parallel to approximately 4 miles of Roaring Fork Creek. Also under all Alternatives the Roaring Fork single-track trail would be maintained in its current location and types of use which includes motorcycles. The Roaring Fork trail crosses the creek at the mouth of Rough Canyon and connects to FR435. Roaring Fork was not one of the streams that received Proper Functioning Condition assessments. Additional evaluation of this trail may be necessary to check potential sources of sediment before making a final determination about effects to fish habitat.

3.5.2.3 *Priest Gulch*

Under all of the alternatives the Priest Gulch trail remains in its current location parallel to Priest Creek. The trail is located upslope from the creek in most locations and has one trail crossing. Priest Gulch trail is a popular trail and is currently open to all types of use (horse, hike, mountain bike and motorcycle). Due to its popularity, this trail is maintained annually including but not limited to, tread repair, water bar maintenance, and tree removal. The Priest Gulch trailhead parking area is located near Priest Creek and dispersed camping is prohibited at this trailhead under all alternatives. A bridge crosses Priest Creek linking the trailhead to the South Calico NRT. Priest Creek was not one of the streams that has received

Proper Functioning Condition assessments. Additional field evaluation of this trail may be necessary to check potential sources of sediment before making a final determination about effects to fish habitat.

3.5.2.4 Other Perennial Streams with MIS fish species

The application of standard engineering practices for road maintenance limit sedimentation impacts to perennial streams in all areas where a road crosses a stream. No new road construction is proposed under any alternative. Some roads in proximity to streams are located on soils prone to mass movement as discussed in the Soils section of this DEIS. If slumps occur there could be relatively high deposits of sediment to streams at the site. Actions to correct road slumps would include stabilizing the area to reduce sediment. Actions to correct slumps can take up to a few years to complete. See the Roads section of this DEIS for a discussion of road maintenance for this project area.

Similarly, trail engineering and maintenance practices can reduce sedimentation into streams. The design features listed in Appendix B would be followed. Also similar to roads, trails on soils prone to mass movement could experience slumps or slides and would create short term sedimentation until they are corrected.

Overall habitat for MIS fish is expected to be maintained under all alternatives.

The table below summarizes impacts described earlier in this DEIS for wetland impacts.

Table 3-12 Summary of Stream and Wetland Impacts

Alt A	Alt B	Alt C	Alt D	Alt E
Most road/stream crossings; Most miles of road in proximity to riparian and most motorized trails in proximity to riparian areas	Less than A and C but more than D and E.	Less than A, More than B, D or E	Less than A, B or C and more than E	Least amount of motorized trails in proximity to riparian areas (note: trail still exists in current location but user group changes)

3.5.3 Cumulative Effects

Restoration efforts include stream reclamation, barrier planning and design, genetic testing of local populations, etc. Projects that have occurred recently in the RWD area include 1) reconstruction of trail crossings on the Rio Lado Trail, and 2) barrier maintenance on the Rio Lado Fish Migration Barrier. Colorado River cutthroat trout populations can be susceptible to overangling. The CPW has an artificial lures and catch and release regulation on many Colorado River cutthroat trout streams and all of the greenback lineage cutthroat trout streams discussed above.

The upcoming Taylor-Stoner Vegetation Management Project would result in ground disturbance, however, project design criteria will likely be applied to limit effects to perennial streams or connected uplands.

The combined effects of this project depend on implementation of trail developments to adequately mitigate impacts from trails on sensitive fish habitat. If developments are successful the combined effects of this and the projects listed above results in a minor cumulative effect.

3.6 GEOLOGY/SOILS

3.6.1 Background

The Geology and Soils section addresses areas where geologic factors have the potential to raise concerns for the management of motorized use in the Rico West Dolores landscape. There are two general categories discussed below 1) soils prone to mass movement and 2) soils prone to becoming incised 'down-cutting'.

Applicable Forest Plan Guidelines for Soils

- Terrestrial Ecosystems and Plant Species Guidelines p. 29 - 30
 - a. 2.2.70 Ground-disturbing management activities should not occur on lands that have a high potential for mass movement, including lands associated with ... soil map units 254, 386, 606, 720, 926, 2051 1D ... or lands that display evidence of slope instability, unless site-specific field analysis indicates that mass movement is not likely to occur on those lands.
 - b. 2.2.75 Ground-disturbing projects on shale soils of the Mancos Shale, Lewis, Fruitland, and Morrison geologic formations, and other highly erosive soils, should be designed to include efforts that avoid or mitigate soil erosion or compaction.

3.6.2 Affected Environment

Several geology layers within the analysis area are prone to landslides or the weathering of the parent material resulting in erodible fine silt/clay soils. For example, the meadows road (FSR 535) has experienced ongoing stability problems in two locations where it crosses the claystone/mudstone member of the Morrison Formation. The formation tends to impede groundwater resulting in increased pore-water pressure and decreased shear strength, thus facilitating slope failure during periods of heavy rainfall and spring melt. Roads and trails constructed on native surface materials depend on the soil's ability to support a load, or its bearing strength, as well as soil cohesion (Meyer, 2002). The construction standards applied to roads result include less steep grades than trails thus resulting in a lower frequency of failure however, failure along road alignments tend to be catastrophic in nature given the user expectation. Proper construction and timely maintenance of drainage features mitigates erosion and prevents surface failure under most conditions.

In other areas, parent material that weathers to finely textured soils with little surface rock and that have high percentages of organic matter, silt and clay, has poor bearing capacity. This is the case with some members of the Cutler formation, particularly when the bedding surfaces of the strata are parallel to the slope. When unfavorable geologic/soil conditions are combined with steep slopes and high use, degradation and erosion of the route surface occurs. This includes 'down-cutting' where the trail can become deeply incised. These conditions are more frequent along trail alignments than roads. Trails have historically been located on steeper grades with less consideration given to geologic factors.

As with roads, proper construction, timely maintenance of drainage features mitigates erosion and prevents surface failure in most conditions. However, the Upper Ryman Trail (735) is an example of a trail located on erodible soils derived from the Cutler formation. The Cutler Formation in this area appears to be especially problematic perhaps because of the dip of the strata or because it has been altered, or cooked, due to its proximity to the Rico Dome. Some sections of this trail have extremely steep pitches, the combination of these factors result in a highly erosive unsustainable trail location.

3.6.2.1 Roads

A GIS map of the soil map units¹² prone to mass movement or slope instability is located in the project file. Many of the arterial roads managed as a ML3 roads (maintained for standard passenger cars), cross soils mapped as prone to mass movement.

The following roads include short segments that cross soil types prone to mass movement but the majority of the alignments are on located on formations identified as low risk to mass movement; FR534 (Lone Cone), FR476 (Cayton CG) FR611 (Black Mesa) and FR547 (Taylor Mesa). These segments tend to require additional maintenance efforts but mass movement is not common.

The following roads alignments have significant segments constructed across soil types identified as prone to mass movement; FR686 (Stoner Mesa), 545 (Taylor Creek), 535 (West Dolores), 578 (Hermosa Park also called Barlow Rd). Hillside Drive (FR436) lies almost entirely across these soil map units. These roads require additional maintenance and reoccurring reconstruction efforts. Historically these road require reconstruction contracts of greater than \$100,000 to maintain passenger car access.

Many ML2 roads are located on soil types identified as prone to mass movement. Most of the ML2 roads cross these map units occasionally for minor sections of the road. The following ML2 roads are most affected by potential for mass movement because the alignments have significant segments constructed on soils types identified as prone to mass movement. (FR358, 436 (ML2 portion of Hillside Drive), FR550 (Scotch Creek), FR422, 422A and 423 (Burnett, Expectation and Horse Creek Roads west of the Town of Rico), and FR727 (Willow Divide). Repairs on these roads are typically less of an issue due to the four wheel drive nature of the intended uses. Consideration should be given to engineering design on these routes if they are required for resource development projects.

ML1 roads cross soil types prone to mass movement. Because ML1 roads are stored they will not be discussed further. Separate NEPA analysis for timber sales or other activities that propose to use a stored road would occur. ML1 maintenance is emphasized in areas that are prone to mass movement as identified in the Soils Prone to Mass Movement Map.

3.6.2.2 Trails

Various trails currently cross soil map units prone to mass movement. As with the roads, some trails only cross small patches of these soil types, while the majority of other trails are affected. Trails with a high percentage of soil types prone to mass movement include Goldrun, Grindstone, Little Bear, Burnett Creek, Horse Creek, Morrison and Willow Divide OHV trail. The North Calico, East Fork, Stoner Mesa,

¹² A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils.

and Calico South trail cross patches of soil types prone to mass movement that make up less than 1/3 of the trail length.

The proposed Rio Grande Southern and Burnett Trail Connector would cross these soil types and a small patch occurs on the Loading Pen trail. The entire length of the Spring Creek trail is located on these soil types.

The cutler formation soil types that surround Ryman and Salt Creek trails are not part of the soil map units prone to mass movement. Soils under the Ryman trail are prone to severe downcutting in part because the bedding surfaces of the strata are parallel to the slope. This downcutting problem is important to consider even if the Ryman soils are not prone to mass movement.

3.6.3 Effects of the Alternatives

3.6.3.1 Roads

There is very little difference between the alternatives for maintenance level 2 and 3 roads open to general public use. Under all alternatives, maintenance will be needed for roads that cross soil types prone to mass movement when a slump or slide occurs. This has been the history of the RWD road system and was noted in the Travel Analysis Process report where some of these roads were given a high risk rating for geologic hazard.

The ML3 and ML2 roads listed above provide access into the RWD area that cannot be provided without crossing these soil types. Re-locating these roads is not likely to reduce impacts given the topography and engineered character of the existing alignments. Re-locating would also result in temporary disturbance that is not desirable. Passenger car access to areas in this landscape will be at the mercy of mass movement into the future. These events provide an opportunity for appropriate stabilization efforts, these efforts and should be properly designed to realize appropriate safety standards and long term cost savings.

Most of these road segments are engineered in the best manner possible given the topography (personal observation Jones 2015). However, regardless of the road engineering, future slumps could occur that will cause short term impacts to vegetation and water quality. Slumps that feed into streams present a short-term flush of sediment. Roads that cross soil map units prone to mass movement AND fall with 100 feet of fens or unverified wetlands are FR545 (Taylor Creek), FR436 (Hillside Drive), FR611 (Black Mesa), FR578 (Hermosa Park), ,and FR534 (Lone Cone). The design features listed in Appendix B include field review of fens and unverified wetlands related to these roads. In some cases but not always a fen or unverified wetlands may also be located on soil types prone to mass movement.

Forest Plan guideline 2.2.70 described above may not be followed for the entire RWD area. If roads are considered a 'ground disturbing management activity' then the guideline would not be followed for all road segments because this site specific analysis notes that mass movement could potentially occur in some areas and can also be considered 'likely'. It is necessary to maintain open roads across soils types with a potential for mass movement in order to provide access for recreation and forest management in the RWD area.

The potential for increased maintenance or reconstruction work to respond to a slump or slide on a system road does not change across the alternatives. This is because the total miles of road and the locations are very similar to the current system with only minor changes.

3.6.3.2 Trails

Based on field observation slumping seems to occur less frequently on the trail system as opposed to the Forest road system. Within the last 10 years 2 slides, that staff are aware of, have occurred on the trail system in this analysis area. One on the Fish Creek trail in 2015 and one on the Stoner Creek trail in 2013 (both non-motorized trails). Slides have likely occurred in other areas in past but the occurrence is not frequent (personal observation Bouton 2015).

If a slump or slide occurs there could be short term impacts to vegetation at the slump site. If slumps occur near streams or wetlands and flush of sediment could be expected. The table below lists trails in proximity to fens and unverified wetlands, or riparian areas that also contain patches of soils prone to mass movement. These trails have a higher potential for sedimentation from unplanned slumps or slides.

Table 3-13 Trails and Types Of Use On Soils Prone To Mass Movement

Trail Name	Soils	Alternatives
South Calico (3 unverified wetlands)	Trail crosses several relative small sections of soils prone to mass movement	Includes motorcycle use in all alternatives
Winter Trail (1 fen)	Trail skirts the edge of soil prone to mass movement	Motorcycle user group is removed in Alts B, C, D and E
East Fork (3 fens)	The lower slopes of this trail cross soil map units prone to mass movement however the fens are located in the upper most sections near Bolam Pass	Motorized in Alts A, B, C, D and nonmotorized in Alt E.
Rio Grand Southern (riparian vegetation)	Trail crosses a patch of soils prone to mass movement at lower end (across from Montelores Bridge).	Motorized in Alts C, D and E
Spring Creek (stream and riparian veg and springs)	Entire trail located on soils prone to mass movement	1.5 miles includes motorcycles in Alts C, D and E. Nonmotorized in Alt B.
Tenderfoot Trail (stream crossings and riparian veg)	The trail crosses a small patch of soils prone to mass movement at the very upper end where it connects to Calico NRT.	Motorized in Alt C with reconstruction of upper section.
North Calico (wetlands)	Trail crosses two patches of soil map units prone to mass movement.	Motorized with trail realignments and developments in alternatives B, C and D. Nonmotorized in Alt E.

Trail maintenance is described in the Trail Feasibility section later in this DEIS. Maintenance frequency on trails that cross soil types prone to mass movement may be higher if a slump occurs and must be repaired. These mass movement events occur regardless of type of trail use, therefore the effects of slumping and mass movement in regards to forest trails are the same across all alternatives for existing

trails. Alt C, D and E propose adding the Rio Grande Southern Trail to the system. This would slightly increase the miles of trail located in areas prone to mass movement.

The Ryman Trail is located on soils prone to down-cutting. Under Alternative A the Ryman trail is maintained in its current location with current uses including motorcycles. Current conditions would continue that include severe downcutting of the trail. Under Alternatives B, C, D and E one section of the Ryman trail would be decommissioned and removed from the trail system for all types of use. The remainder of the trail would be maintained and one user group (motorcycles) would be removed which would lessen the overall use of the trail. In addition, when traveling uphill spinning tires can ‘speed up’ the downcutting process so removing motorcycles should ‘slow down’ this process. The problem of downcutting is not entirely alleviated however because the trail continues to provide for horse, hike and mountain bike user groups.

3.7 RARE PLANTS

3.7.1 Federally Listed Threatened and Endangered Plants

3.7.1.1 Affected Environment

One federally listed plant species, Pagosa skyrocket, has potential to occur on the San Juan National Forest (USFS, 2015) and the potential to occur in this analysis area. As shown in Table 3-14, the project area contains suitable habitat for this species.

Table 3-14 Federally Listed Plant Species with Potential to Occur on the San Juan National Forest

Species	Status	Habitat Description	Potential to Occur on Project Site
Pagosa skyrocket (<i>Ipomopsis polyantha</i>)	Endangered	Occurs at 6,750 to 7,775 feet. Found on barren shale and in ponderosa pine, pinyon-juniper, or scrub-oak communities on the Mancos Shale Formation. Seventy-five percent of its population has been located on disturbed sites such as roadsides and residential or pasture lands.	While not known to exist within the project area or on the District, suitable habitat does exist in the lowest elevations (between 7,000 and 7,750 feet).

Habitat: The Pagosa skyrocket is a nonwoody (herbaceous), biennial plant species in the phlox family that occurs on rocky clay soils of Mancos shale. Typically it is found on road shoulders where the soil has been disturbed. The highest densities are in ponderosa pine forests with a montane grassland understory, at elevations of 6,765 to 7,362 feet.

Distribution and Occurrence: Pagosa skyrocket is only found in two populations in and near the town of Pagosa Springs, at an elevation of 6,800 to 7,300 feet. The plant can be found on gray soils derived from Mancos shale in open grasslands and grassland understories at the edges of open forests. The species has adapted to grow on these shale soils, which are very dry and erosive, making the conditions harsh and difficult for most other plant species to survive. Due to development impacts, remaining Pagosa skyrocket habitat is often found adjacent to roads, in dry ditches, among buildings, and in some pastures. The entire global range of Pagosa skyrocket is planned for residential development in the *Archuleta County Community Plan*. Given the serious nature of the threats to Pagosa skyrocket, it is

among the most endangered species in Colorado. The current and potential conversions of agricultural lands to residential and commercial development are incompatible with conservation of Pagosa skyrocket in the long term because they cause direct mortality and permanent loss of habitat.

3.2.1.2 Effects of Alternatives

Alternative A: Currently, system and some unauthorized roads and trails in ponderosa pine ecosystems are creating impacts through ground disturbance, channeling of water, and erosion. The greatest amount of disturbance (8 acres) occurs under Alternative A. (Although one way to quantify impacts is to look at total acres of disturbance, it might be more accurate to look at linear miles, since impacts are spread out across the landscape.) This Alternative provides 4.5 miles of motorized trails through this vegetation type.

Alternatives B, C, D, and E. Impacts from these Alternatives are like those under Alternative A, except that disturbance under these Alternatives would impact 7 acres (and 2 linear miles of motorized trails). No new road or trail construction would occur in this vegetation type.

3.7.2 Forest Service Sensitive Plant Species

3.7.2.1 Affected Environment

The RWD analysis area encompasses approximately 244,255 acres in the heart of the Dolores District, San Juan National Forest. It falls within Townships 37-42 North and Ranges 9-14 West, with an elevation of 7,000 to 13,000 feet. It contains a wide variety of vegetation types, including those shown in Table 3-15 below:

Table 3-15 Vegetation Types in Rico-West Dolores Analysis Area

Vegetation Type	Acres within Analysis Area
Alpine	12,390
Mountain Grassland	18,276
Mountain Shrubland	9,106
Rock/Bare Soil	1,493
Riparian	8,144
Sagebrush Shrubland	673
Aspen	19,435
Aspen/Mixed Conifer	53,570
Cool Moist Mixed Conifer	6,925
Warm Dry Mixed Conifer	4,732
Pinyon-Juniper	248
Ponderosa Pine	4,713
Spruce/Fir	116,199

There are no known populations of any sensitive plant species within the analysis area. However, of the 17 sensitive plant species known or suspected to occur on the Dolores District, several species have *potential habitat* within the analysis area.

Table 3-16 lists the sensitive plant species known or suspected to occur on the Dolores District, based on the September 2015 Matrix for Forest Service Region 2 (Rocky Mountain Region). This list is organized alphabetically by the species' Latin names.

Table 3-16 Sensitive Plant Species Known or Suspected to Occur on the Dolores District

Species	Habitat	Corresponding Vegetation Type from Table 3-15	Habitat Present in Analysis Area?
<i>Astragalus iodopetalus</i> (-Violet milkvetch)	Dry stony hillsides and benches; commonly on granite, often in oak, pinyon, or sagebrush; at 6,000 to 8,000 feet	Sagebrush shrubland, pinyon-juniper, ponderosa pine	Yes
<i>Carex diandra</i> (Lesser panicked sedge)	Calcareous subalpine fens and bogs	Subset of riparian vegetation type	Yes
<i>Drosera anglica</i> (English sundew)	Fens with wet, often calcium-rich soils	Subset of riparian vegetation type	Yes
<i>Epipactis gigantea</i> (Giant helleborine orchid or stream orchid)	Seeps on sandstone cliffs and hillsides; springs and hot springs; at 4,800 to 8,000 feet	N/A	Yes, but travel routes would not occur on this habitat type.
<i>Eriophorum chamissonis</i> (Chamisso's cottongrass)	Fens	Subset of riparian vegetation type	Yes
<i>Eriophorum gracile</i> (Slender cottongrass)	Fens, wet meadows, pond edges; at 8,100 to 12,000 feet	Subset of riparian vegetation type	Yes
<i>Gutierrezia elegans</i> (Lone Mesa snakeweed)	Pinyon-juniper, semidesert shrubland, sagebrush; barren Mancos shale outcrops and grayish, argillaceous shale outcrops; tends to be a dominant plant in openings between low shrubs of <i>Artemisia</i> , <i>Chrysopsis</i> , and <i>Tetraneuris</i>	Pinyon-juniper, sagebrush shrubland	No, routes do not occur in this vegetation type.
<i>Machaeranthera coloradoensis</i> (CO tansy-aster)	Alpine, spruce-fir; gravelly areas in mountain parks, slopes, and rock outcrops up to dry tundra; at 8,500 to 12,500 feet	Alpine	Yes
<i>Pakera mancosana</i> (Mancos shale pakera)	Barren Mancos shale areas in pinyon-juniper, semidesert shrublands	Pinyon-juniper, sagebrush shrublands	N/A (travel routes do not occur in this vegetation type)

Species	Habitat	Corresponding Vegetation Type from Table 3-15	Habitat Present in Analysis Area?
<i>Parnassia kotzebuei</i> (Kotzebue grass-of-Parnassus)	Subalpine and alpine wet, rocky ledges; in streamlets and moss mats, often in association with lakes; at 10,000 to 12,000 feet	Riparian	Yes
<i>Physaria pulvinata</i> (Cushion bladderpod)	Pinyon-juniper, semidesert shrubland, sagebrush; barren shale outcrops and grayish, argillaceous shale outcrops; tends to be a dominant plant in openings between low shrubs of <i>Artemisia</i> , <i>Chrysopsis</i> , and <i>Tetrandeum</i>	pinyon-juniper, sagebrush shrubland	N/A (travel routes do not occur in this vegetation type)
<i>Salix arizonica</i> (Arizona willow)	High-elevation wetlands and riparian areas; extending from Low subalpine to just below treeline; usually mixed with other short willows	Subset of riparian vegetation type	Yes
<i>Salix candida</i> (Sageleaf willow)	Hummocks in nutrient-rich fens and thickets at edges of ponds and river terraces; often growing with other <i>Salix</i> and <i>Carex</i> spp.; at 8,800 to 10,600 feet	Subset of riparian vegetation type	Yes
<i>Sphagnum angustifolium</i> (Sphagnum)	Fens	Subset of riparian vegetation type	Yes
<i>Sphagnum balticum</i> (Baltic sphagnum)	Fens	Subset of riparian vegetation type	Yes
<i>Triteleia grandiflora</i> (Largeflower triteleia)	Grasslands or sagebrush, pinyon-juniper woodlands to ponderosa pine forest slopes and hills; at 4,500 to 7,500 feet	Ponderosa pine, pinyon-juniper	Yes
<i>Utricularia minor</i> (Lesser bladderpod)	Submerged in fens, shallow ponds, lakes, and slow-moving streams; attached, not floating	Subset of riparian vegetation type	Yes

3.7.3 Effects of the Alternatives

The effects of the Alternatives are described by the vegetation types (e.g., ponderosa pine, riparian, sagebrush shrubland, etc.). Acres of disturbance by vegetation type are listed first, followed by explanations of effects to the habitat within each vegetation type.

3.7.3.1 Acres of Disturbance

Land covered by roads and trails have lost topsoil, have become compacted, and support minimal vegetation. As a result, inherent productivity has been lost or greatly diminished. For this analysis, the following assumptions have been made regarding the average extent of surface disturbance caused by a particular type of use:

- All-terrain vehicle (ATV) and utility vehicle (UTV) routes = 0.6 acres/mile
- Single-track trails = 0.3 acres/mile
- High-clearance, surfaced, and passenger car roads = 4 acres/mile

Because this analysis is focused on motor vehicle use, only trails that include motorcycle use were calculated. ML1 roads were not included because they remain stored and vegetated; a separate NEPA analysis would be conducted if a future project were to involve opening an ML1 road.

Table 3-17 shows the number of acres of disturbance for each vegetation type, by Alternative. These acres would remain unavailable for plant growth (productivity) over the long term because the routes would be dedicated to travel. The total acreage is a very small percentage of the vegetated landscape. Except for nonmotorized trails, there are very few other sources of long-term ground disturbance in the RWD area.

Table 3-17 Acres of Disturbance (Dedicated to Road or Trail tread) by Vegetation Type by Alternative

Vegetation Type	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
Alpine	5	4	4	4	3
Mountain Grassland	128	119	120	119	119
Mountain Shrubland	39	39	40	40	39
Riparian	31	30	30	30	30
Sagebrush Shrubland	3	3	3	3	3
Aspen	62	62	63	61	61
Aspen/Mixed Conifer	148	139	140	138	138
Cool Moist Mixed Conifer	23	23	23	23	23
Warm Dry Mixed Conifer	20	20	20	20	20
Pinyon-Juniper	<1	<1	<1	<1	<1
Ponderosa Pine	8	7	7	7	7
Spruce Fir	368	344	343	340	337
Total Acres of Disturbance	836	791	790	786	781

3.7.3.2 Effects within All Vegetation Types

No new road construction is proposed under any Alternative. Minor amounts of new trail construction would be necessary to establish the proposed 62-inch trails.

Ground disturbance associated with decommissioning of roads is an example of a direct effect on vegetation. On a landscape scale and over the long term, route decommissioning would have a positive direct effect on vegetation communities because the land would eventually return to a vegetated state, reducing fragmentation of habitat between road corridors. During the implementation of decommissioning, sensitive plant occurrences would be protected from any direct adverse effects through the application of Design Features listed in Appendix B.

Because cross-country travel and unmanaged access can directly affect vegetation, primarily on open land, cross-country travel is prohibited under all five Alternatives. Nonetheless, some level of illegal off-

system travel will likely continue, which is especially damaging during wet conditions, when many soils are most fragile. By postponing travel until conditions are drier, timing restrictions can help to reduce the amount of damage that off-system travel causes. Alternatives B, C, D, and E apply seasonal restrictions to motorcycle, ATV or UTV riding on trails. None of the Alternatives apply a seasonal restriction to full-size vehicles.

Indirect effects can occur from user-created routes that are not designated as part of the transportation system. Because these routes have not been designed and/or maintained to standard, erosion or sedimentation may occur, affecting the quality of vegetation communities (such as riparian areas and wetlands). Since all motorized activity would be restricted to the designated transportation system (and cross-country motorized travel would be prohibited), damage to the vegetation resource should be reduced and limited regardless of the Alternative chosen.

Lack of routine maintenance to roads and trails can affect vegetation; however, properly designed and maintained routes with drainage features such as water bars, ditches, culverts, and/or turnpikes can alleviate many problems.

3.7.3.3 Effects by Vegetation Type

Riparian Vegetation Type – Fens and Riverine Areas

Riparian vegetation occurs in all of the analysis subareas. This discussion of effects of Sensitive species habitat in the riparian vegetation type provides information related to Wetland Impacts. The effects described below reference the Watershed, Soils, Riparian and Water Resources section that appears earlier in this chapter.

Table 3-16 above lists Region 2 Sensitive species that have the potential to occur within fens. Most Sensitive plant species with the potential to occur on the Dolores District are found in fens (including lesser panicked sedge, English sundew, Chamisso's cottongrass, slender cottongrass, sageleaf willow, sphagnum, Baltic sphagnum, and lesser bladderpod). Therefore, the management of fens to preserve their integrity is extremely important.

Riverine areas, such as stream banks, are transition zones between permanently saturated wetlands and upland areas. These areas can be detected on the landscape by their physical features and by their characteristic vegetation. Lands along perennially and intermittently flowing rivers and streams, as well as shores of lakes and reservoirs with stable water levels, are typical riparian areas.

Arizona Willow

Another Sensitive riparian plant species, Arizona willow, has the potential to occur on the Dolores District. Arizona willow is ranked "globally imperiled to vulnerable (G2/G3)" by NatureServe and critically imperiled (S1) in Colorado. Its habitat characteristics, as listed in the Conservation Assessment (Decker, 2006), include the following:

- High elevation
- Wet meadows, stream sides, and cienegas
- Narrow, linear strips associated with perennial water in seeps, springs, stream sides, and wet meadows

- Substrates of volcanic origin favoring coarse-textured and well-watered soils, including those associated with alluvial deposits
- Slopes that are flat to moderate (less than 5-9 percent)
- Intact natural hydrological regimes with little or no alteration
- Moist areas with open cover, a good mix of forbs and grasses, the presence of other willow, and shallow slope gradient

Habitat: Arizona willow is known to occur near the margins of the Colorado Plateau in Utah, Arizona, New Mexico, and Colorado. In Region 2 (the U.S. Forest Service Rocky Mountain Region), the only known occurrence is on the Rio Grande National Forest along a stream at approximately 10,300 feet in elevation. In the San Juan National Forest, several high-elevation creek crossings in the RWD analysis area exist in potential Arizona willow habitat: Spring Creek (at 10,000 feet), Fish Creek (at 9,700 feet), and Lone Cone (at 10,600 feet). All of these crossings occur at approximately the elevation where Arizona willow was located on the Rio Grande National Forest.

Although the habitat for Arizona willow may exist within the project area, it is unlikely. This is because 1) soils in the area are of alluvial, not volcanic, origin, and 2) hydrologic systems within the project site have been manipulated from road and trail development and therefore do not qualify as natural hydrologic regimes. Although not likely to occur within the analysis area, a discussion of effects to potential Arizona Willow habitat provides information about effects on other willow species.

Effects of the Alternatives

Alternative A: Currently, system and unauthorized roads in the Fish Creek and Lone Cone areas (Subarea 1) and the Spring Creek area (Subarea 3) are impacting wetlands and river riparian areas. In the Fish Creek area, illegal OHV (ATV/UTV) use is occurring between FR305 and FR404, creating tracks through an extensive willow grove and beaver dam system, and through sedge-dominated wet meadows. In this area, Fish Creek is dependent upon riparian vegetation for streambank stability and is very sensitive to vehicle impacts. If unauthorized routes continue to increase in number and use, a departure from Desired Conditions is likely.

In the Lone Cone area, FR534 became impassable and use shifted to an ML1 road (FR534H). This use of FR534H, combined with user-created routes, provides a connection to the northeast side of the Forest. Unfortunately, FR534H goes directly through wetlands, causing alteration of the hydrology in the area as well as impacts to the wetland ecosystem.

Spring Creek Trail does not provide a connection to FR547 or FR692 for motorcycle riding under Alternative A.

Alternative B: Under this Alternative, the Forest Service road system in both the Fish Creek and Lone Cone areas would be greatly improved, which would reduce OHV (ATV/UTV) use in sensitive wetland and riverine areas.

Alternatives C, D, and E: Same as Alternative B, except Spring Creek would include motorcycle use, allowing continued riparian impacts.

3.7.3.4 *Alpine*

The alpine vegetation type occurs at the highest elevations of the RWD landscape. Alpine areas with roads or trails that include motorcycle use occur in Subarea 5 and Subarea 7.

The alpine vegetation type accounts for 12,390 acres within the RWD landscape. Two Sensitive plant species with potential to occur on the Dolores District are found in alpine areas: Colorado tansy-aster and Kotzebue's grass-of-Parnassus.

Colorado Tansy-Aster (*Machaeranthera coloradoensis*)

Habitat: Colorado tansy-aster is a perennial forb species that occurs in a variety of habitats from montane to alpine areas. When addressing the conservation of this species it may be important to consider its apparent preference for exposed substrates of calcareous, sedimentary, and volcanic origin; its potential reliance on continuous natural disturbances to create/maintain open habitat; and its possible poor competitive abilities, as evidenced by its preference for sparsely vegetated areas (Beatty, 2004).

Distribution and Occurrence: Colorado tansy-aster is a regional endemic species with populations located in central, west-central, and southwestern Colorado and south-central Wyoming. Of its 33 occurrences worldwide, 21 occurrences are on lands managed by the U.S. Forest Service in Colorado and Wyoming. A single occurrence was documented in Dolores County in 1995 at an elevation of 12,940 feet. Additional occurrences in the San Juan National Forest were recorded in 1934, 1972, and 1982, all at high elevations (generally above treeline).

There are two known occurrences of Colorado tansy-aster within the project area. One occurs just south of the Burnett Trail south of Storm Peak (T40N R11W SE32). This occurrence was last monitored in 2008. The other occurrence is located on the east side of Blackhawk Mountain, west of and crossing the Colorado Trail (T40N R10W SESE32, SWSW33). This occurrence was last visited in 2006. No problems with these occurrences were reported.

Actions that could lead to Effects: Colorado tansy-aster is vulnerable because of its restricted geographic range and small number of documented occurrences. Direct or indirect negative impacts to populations or habitats by human-related activities could occur from motorized and nonmotorized recreation; trail or road construction and maintenance; reservoir expansion; housing developments; changes to natural disturbance regimes; domestic livestock activities; invasive species introduction; or small-scale mining. Based on the available data on abundance and distribution, this species appears to be viable within U.S. Forest Service Region 2 under current natural disturbance regimes and current levels of recreation and management activities (Beatty et al, 2004). Certain populations (e.g., populations on roadsides) may need immediate, active management to prevent extirpation.

Effects of the Alternatives

Alternative A: Alternative A would result in the greatest extent of disturbance to alpine areas (5 acres, or 04% of this habitat type). (Although one way to quantify impacts is to look at total acres of disturbance, it might be more accurate to look at linear miles, since impacts are spread out across the landscape.) This Alternative would provide 10 miles of motorized trails through the alpine vegetation type.

Trails with motorcycle use that occur above treeline include Calico NRT; others that connect to Calico NRT above treeline include Burnett Creek, East Fall Creek, Horse Creek, Johnny Bull, Priest Gulch, and West Fall Creek Trails.

The trail treads themselves would not provide habitat for Colorado Tansy Aster because the trail treads are dedicated bare ground areas. Impacts to habitat for this plant occurs when humans or animals step off of the trail tread moving the loose soils and rocks by hoof or tire action. Off trail travel by motorcycles has been known to occur in the past (utube videos, permit administration notes). Since the closure to cross-country travel in 2010, off trail use has diminished (personal conversation C.Bouton 2015).

In order to determine whether or not new user-created trails are forming in the alpine habitat the one-meter resolution aerial images were reviewed on the computer screen. Although there were a few places along the trail that looked like compacted areas, there was very little evidence of new recreation trails that have formed and cross-country use was not determined to be widespread. Some linear features on the photos were noted and appeared to be game trails because they traveled with the contours or terraces/trails from historical sheep grazing. (dkill and tkochanski 2015).

Timing restrictions could lessen off-trail travel in the alpine habitat because patches of snow may stay place in early summer. Although the Dolores district gives permission for trail users to shovel pathways through remnant snowbanks, some riders travel around the snowbank creating new trail tread. There are no timing restrictions in Alternative A.

Alternatives B, C, and D: Impacts from these Alternatives are similar to those under Alternative A, except that these Alternatives disturb 4 acres (and 8.5 linear miles). Horse Creek and Wildcat trails are examples of trails where motorcycle use would be removed including the 'above treeline' sections of these trails that connect to the Calico NRT. The trail would remain in their current locations available to nonmotorized uses so the trail tread would remain unavailable as tansy aster habitat. Off-trail disturbance effects would occur but to a lesser degree because of one less user group on these trails. In addition, timing restrictions limit the potential for off-trail travel around remnant snowbanks. Alternative B results in the least potential for riding around snowbanks because riding would not begin until July 1st. Snowbanks could still be present when riding begins June 1st in Alternatives C and D.

Alternative E: Impacts from this Alternative are similar to those under Alternative A, except that this alternative disturbs 3 acres (and 5 linear miles). Sections of trail above treeline where motorcycle use would be removed includes the North Calico, and intersecting sections of Johnny Bull and East and West Fall Creek trails. The treads would remain unavailable as habitat because nonmotorized use would continue on the trail treads. Disturbance from off-trail use would be diminished because of one less user group. Off trail use by horse, hike, or mountain bikes could still occur.

Kotzebue's Grass-of-Parnassus (*Parnassia kotzebuei*)

Habitat: Kotzebue's grass-of-parnassus is a small and inconspicuous member of the Saxifrage family (*Saxifragaceae*) with short, leafless flowering stems that support single flowers with small white petals. *Kotzebuei* is found primarily above treeline, and also in subalpine forest openings, on rocky coniferous slopes, and in deep spruce forests.

Distribution and Occurrence: On a global scale, this is a relatively common species of *Parnassia*. It grows in mesic to wet, arctic, and alpine habitats across circumpolar areas of the northern hemisphere, and is found in scattered locations at high elevations in Washington, Nevada, Idaho, Montana, Wyoming, and Colorado (Panjabi & Anderson, 2007). The distribution of *kotzebuei* in Region 2 is quite limited relative to its overall range; within Region 2, this species is found only in Wyoming and Colorado. Occurrences are usually in remote, infrequently visited areas where the parent material is sedimentary, metamorphic, or igneous. The only recorded occurrence of *kotzebuei* on the San Juan National Forest was in the Weminuche Wilderness near Balsam Lake in 1961 (Panjabi & Anderson, 2007).

Actions that could lead to Effects: Although *kotzebuei* occurrences in Colorado and Wyoming are exposed to threats, the severity and extent of the threats are moderately low. In order of decreasing severity, potential threats to this species include effects of small population size, global climate change, motorized recreation, grazing, nonmotorized recreation, exotic species invasion, mining, and pollution (Panjabi & Anderson, 2007).

Effects of the Alternatives

Impacts of the Alternatives are the same as described above for the Colorado Tansy Aster.

3.7.3.5 Ponderosa Pine

Ponderosa pine occurs at lower elevations along Hwy. 145 and in the southernmost portion of the analysis area (in Subareas 3, 4, and 9).

The ponderosa pine vegetation type accounts for 4,713 acres within the RWD analysis area. Ponderosa pine stands include Gambel oak in the understory. The largeflower *triteleia*, a Sensitive plant species with potential to occur on the Dolores District, is found in ponderosa pine and Gambel oak vegetation types.

Largeflower triteleia (Triteleia grandiflora)

Habitat: Largeflower *triteleia* is a perennial plant in the lily family that has been reported from Washington, Oregon, northern California, Idaho, Wyoming, Utah, and southwest Colorado. Largeflower *triteleia* is ranked globally apparently secure to secure (G4/G5) by NatureServe and critically imperiled (S1) in Colorado. Activities on the San Juan National Forest with the most potential to impact largeflower *triteleia* include livestock grazing, recreation, oil and gas development, fire management, timber harvest, and mechanical fuels treatments.

Desired Conditions for largeflower *triteleia* are based on existing conditions at the known occurrence on the Dolores District (described below). Desired Conditions include: a ponderosa pine/Gambel oak stand with approximately 30 percent tree cover, 30 percent shrub cover, 30-40 percent forb cover, 15-25 percent graminoid cover, and 10-20 percent bare ground. The herbaceous understory is relatively diverse and healthy, including several species of perennial forbs and bunchgrasses. Gambel oak is multi-aged with some clumps of mature oak. No noxious weed infestations are present. Light surface fires burn through the stand occasionally.

Distribution and Occurrence: The only known location of this species in Region 2 is on the Dolores District, in open to partially shaded patches in a ponderosa pine/Gambel oak community at

approximately 7,900 to 7,960 feet (Ladyman, 2007). The individual plants are typically associated with the tree form of Gambel oak.

Actions that Could Cause Effects: According to the Conservation Assessment for the species, invasive species, soil compaction, and soil disturbance are listed as major threats to largeflower triteleia. It also lists human recreation, livestock grazing, and resource development (timber and mineral extraction) as threats to largeflower triteleia.

Effects of the Alternatives

Alternative A: Currently, system and unauthorized roads and trails in ponderosa pine/Gambel oak ecosystems are creating impacts through ground disturbance, channeling of water, and erosion. Most of this impact is the result of motorized, single-track use of trails. The greatest amount of disturbance (8 acres) would occur under Alternative A. Although looking at total acres of disturbance can quantify impacts, describing impacts in terms of linear miles tends to exaggerate impacts, which are spread out across the landscape. This Alternative provides 4 miles of motorized trails through this vegetation type.

Alternatives B, C, and D: Impacts from these Alternatives are similar to those under Alternative A, except that they disturb 7 acres (and 2 linear miles).

3.7.3.6 Sagebrush Ecosystems

The sagebrush vegetation type accounts for 673 acres within the RWD analysis area. Violet milkvetch (*Astragalus iodopetalus*) is found in this vegetation type and is a Sensitive plant species with potential to occur on the Dolores District.

Violet milkvetch

Habitat: Violet milkvetch grows on dry, stony hillsides and benches, commonly on granite substrates. It is found in oak thickets, oak/pinyon, or among sagebrush at elevations between 6,000 and 8,000 feet. Weber and Wittmann (2012) report that this species is found in sagebrush habitat in Colorado. It blooms from late May through June.

Distribution and Occurrence: Barneby (1964) mentions 12 collections in New Mexico and Colorado (in Archuleta, Gunnison, La Plata, and Montrose counties).

Actions that Could Lead to Effects: Currently, the primary threat to violet milkvetch is recreation/hiking (Rondeau et al., 2011). It is not known whether all of the occurrences are threatened by these activities; however, the best-documented occurrence of this species is within Chimney Rock National Monument, where it may be threatened by recreation.

Effects of the Alternatives

Alternatives A, B, C, D, and E: Because each Alternative would allow 3 acres of ground disturbance through this vegetation type, each one poses the same degree of threat to the violet milkvetch.

3.7.4 Cumulative Effects

Nonmotorized trails are also pathways dedicated to bare ground that is not available for rare plant habitat.

3.7.5 Summary of Effects of the Alternatives

The table below summarizes effects by alternative.

Table 3-18 Potential Effects to Endangered and Sensitive Plant Species, by Alternative

Ecosystem Type	Disturbance/Alternative					Number of Plant Species Potentially Affected
	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	
Number of fens or potential fens affected by roads, after decommissioning	27	25	25	25	25	8 Sensitive
Number of stream crossings (riparian) per mile, by motorized roads/trails*	.51	.41	.42	.39	.36	1 Sensitive
Alpine	5 acres	4 acres	4 acres	4 acres	3 acres	2 Sensitive
Ponderosa pine/Gambel oak	8 acres	7 acres	7 acres	7 acres	7 acres	1 Endangered 1 Sensitive
Sagebrush	3 acres	3 acres	3 acres	3 acres	3 acres	1 Sensitive

*Includes ML1 - ML5

3.7.6 Cumulative Effects

Nonmotorized trails also create pathways of bare ground not available for rare plant habitat. The 141 miles of nonmotorized trails cross all the vegetation types in the analysis area. Off trail use by nonmotorized recreation has the potential to crush plants or move soil especially in wetland areas, or alpine areas. Regardless there remains many acres of habitat where no roads or trails exist.

One vegetation management is proposed on Taylor and Stoner Mesa and this project would include surveys and mitigations measures necessary to protect known plant populations and the project.

3.8 TERRESTRIAL WILDLIFE

This section of the DEIS discusses Federally listed Threatened, Endangered and Proposed Species, Forest Service Sensitive Species, and Management Indicator Species. Of these, elk habitat is highlighted for detailed discussion.

3.8.1 Federally Listed Threatened, Endangered, and Proposed Species

Species listed by the United States Fish and Wildlife Service (USFWS) as threatened, endangered, or candidate species are listed below in Table 3-19. Of the species listed, only Canada lynx is carried forward in the analysis. The Table below explains why the other species were not discussed further in this analysis. :

Table 3-19 Threatened, Endangered or Candidate Species Table

SPECIES	STATUS*	HABITAT DESCRIPTION	KNOWN OR SUSPECTED TO BE PRESENT	SUITABLE HABITAT PRESENT?	DESIGNATED CRITICAL HABITAT PRESENT OR COULD BE AFFECTED?	RATIONALE IF NOT CARRIED FORWARD FOR ANALYSIS
Canada lynx (<i>Lynx Canadensis</i>)	T	Early- and late-successional, cool-moist mixed conifer and spruce-fir forests, also aspen/willow/shrub-steppe. Early-successional forests used for foraging, and late-successional forests used for denning and foraging.	Yes	Yes	No	N/A
New Mexican meadow jumping mouse (<i>Zapus hudsonius luteus</i>)	E	Riparian areas below 8,200 feet with perennial flowing water. MSL with saturated soils that support tall, dense, herbaceous vegetation, especially sedges, in the <i>absence of grazing</i> .	No	No	No	Analysis area does not contain potential habitat and livestock grazing is present.
Mexican spotted owl (<i>Strix occidentalis lucida</i>)	T	Caves, cliffs, or trees in steep-walled canyons with distinct cliff bands and vegetated benches used for nesting.	No	No	No	The Dolores River Canyon adjacent to the analysis area is steep-walled; however, it lacks the distinct cliff bands and vegetated benches preferred by owls. Potential habitat occurs downstream on the Dolores River, but no habitat exists within the analysis area.
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	E	Breeds in dense, shrubby, riparian habitats, usually in close proximity to surface water or saturated soil.	No	No	No	Analysis area exceeds the general elevation limit for this species and does not contain suitable size and density of willow habitat. Furthermore, the analysis area is north of the USFWS subspecies

SPECIES	STATUS*	HABITAT DESCRIPTION	KNOWN OR SUSPECTED TO BE PRESENT	SUITABLE HABITAT PRESENT?	DESIGNATED CRITICAL HABITAT PRESENT OR COULD BE AFFECTED?	RATIONALE IF NOT CARRIED FORWARD FOR ANALYSIS
						boundary between <i>E. traillii extimus</i> and <i>E. traillii adastus</i> ; willow flycatchers occurring in more mesic, higher-altitude riparian areas are likely <i>E. traillii adastus</i> .
Western yellow-billed cuckoo (<i>Coccyzus americanus</i>)	C	Riparian woodlands with dense understory vegetation are used for breeding.	No	No	No	Scattered cottonwoods occur in some drainages in the analysis area but lack the dense understory preferred by cuckoos.
Uncompahgre fritillary butterfly (<i>Boloria acrocneuma</i>)	E	Alpine environments above 11,000 feet; host plant is the snow willow.	No	No	No	Snow willow habitat is not present in sufficient size to provide habitat.

* T = Threatened, E = Endangered, C = Candidate

3.8.1.1 Canada Lynx

3.8.1.1.1 Affected Environment

The proposed project is located within four Lynx Analysis Units(LAUs) as identified in the Southern Rockies Lynx Amendment: Bear Creek, Black Mesa, East Dolores, and Rico. An LAU is a constant area within which to evaluate direct, indirect, and cumulative for Canada lynx over time. LAUs were established to approximate the size of a typical lynx home range; however, they do not represent the home range of an actual animal. Within the LAUs, Lynx habitat is defined as Preferred Suitable, Secondary Suitable or Preferred Unsuitable habitat. Preferred unsuitable habitat has the potential to become suitable. Acres may also be identified as nonhabitat.

Within the analysis area there are 142,567 acres of Preferred Suitable (PS) and 27,992 acres of Secondary Suitable (SS), totaling 170,559 acres of suitable habitat. There are 5,659 acres of Preferred Unsuitable habitat (PU) and 27 acres of nonhabitat.

Lizard Head Linkage and North La Plata Linkage are two linkage areas within the analysis area, both of which are on the western side of the analysis area.

No critical habitat has been mapped within the analysis area.

This project does not propose vegetation treatments, prescribed fire, or other activities that would change the forest habitat components for lynx. Changes to forest composition, dead/down woody material, water availability, or prey habitat would not occur as a result of this project. No new road construction is proposed. Ground-disturbing activities associated with trail construction or reconstruction is minor, localized, and not anticipated to change habitat conditions for lynx or its prey species (snowshoe hare).

Motorized and nonmotorized winter road and trail use is not changed by this project. Therefore, snow compaction will not be affected.

3.8.1.1.2 Effects of Alternatives

All action alternatives would maintain a road system similar to the current road system. Roads are a combination of gravel and native surface with low-to-moderate volumes of traffic, depending on the recreation season. Highest use occurs during the fall hunting season. Most driving on Forest roads occurs during daylight hours. Recreation use of the Forest road system is anticipated to continue on an upward trend, as described in the Recreation section of this DEIS. However, high volumes of traffic are not anticipated anywhere in the analysis area because of the distance from large urban centers. Highway 145 is not affected by this project and would continue to be a heavily used highway under all alternatives.

Traffic from other activities such as timber sales or utility site or line construction is localized and infrequent in this analysis area. Separate NEPA analysis for timber sales would occur to address logging truck traffic for a specific area. Lynx are less active during daylight hours, and the alternatives pose the same amount of risk to lynx in terms of traffic-related mortality.

The amount of motorized trails use does differ between alternatives (see maps in Appendix A). However, motorcycles and OHVs navigate trails at slow-to-moderate speeds, depending on the surface and turns in the trails. These motor vehicles create some noise, which alerts animals to their presence.

Given the relatively slow speeds and the noise generated, there is a low likelihood of trail-related mortality to lynx.

Although lynx may be able to tolerate moderate levels of human disturbance, the presence of people at den sites during the denning period can cause den abandonment. This might impact kitten survival or cause movement to a new den site (Claar et al., 1999). Lynx are generally tolerant of humans (Mowat et al., 1999) but studies have not defined a “threshold” associated with recreation activities and the degree of lynx behavioral response. In addition to the availability of nearby secure habitats, responses such as indifference, temporary avoidance, or long-term displacement may depend on the intensity and frequency of human presence and activities.

Lynx that happen to travel within the vicinity of roads and trails are likely to avoid disturbance in the immediate area but otherwise continue to utilize undisturbed portions of the LAUs and linkage areas. Human use of the project area would occur predominately during daylight hours (with less use during dawn and dusk periods), while lynx use of and travel through the project area would largely be during the night.

All alternatives would continue the prohibition on cross-country motor vehicle use. Although some illegal driving off of the designated roads and trails is likely to occur, the levels should be low and trend downwards.

Trapping of furbearing species is a potential lynx mortality factor that may occur on federal and nonfederal lands. Project activities would increase nonmotorized access into habitat suitable for lynx, which could include an increase in local trapping pressure. Trapping with lethal traps is restricted to water and tree sites in Colorado, which reduces the potential for accidental take and mortality of lynx by trapping. In addition, visual lures, baits, and oil lures meant to attract felids are not permitted in the Canada lynx recovery area or on properties known to be occupied by Canada lynx (CPW, 2012). According to lynx monitoring records from 1999 to 2006, no known lynx mortalities due to accidental trapping occurred during this time period (Shenk, 2009). Therefore, the increased risk to lynx of furbearer trapping within the analysis area is low.

Conclusion: Under the Canada Lynx Conservation Agreement, which several land management agencies signed in 2000, the agencies agreed to consider the recommendations contained in the Canada Lynx Conservation Assessment and Strategy (Ruediger et al., 2000) to help guide planning activities and Endangered Species Act Section 7 consultation. This agreement was superseded in 2008 by the Southern Rockies Lynx Amendment (SRLA), which developed conservation measures designed to minimize potential risk factors that may influence lynx or lynx habitat. Objectives, Standards, and Guidelines are addressed in the Record of Decision for the SRLA.

All the alternatives in this analysis are consistent with the relevant Management Activities and Practices identified in the Objectives, Guidelines, and Standards of the SRLA

3.8.1.1.3 Cumulative Effects

Timber harvests have occurred historically within portions of the LAUs, most recently at least 10 years ago. Lynx habitat that became unsuitable has by now regenerated out of the stand initiation phase and into lynx habitat, thus accounting for the low percentage of unsuitable habitat with the LAUs. One aspen

and spruce-fir timber sale has been proposed within the East Dolores LAU on Taylor and Stoner Mesas, scheduled to take place within the next 10 plus years.

Recreation use within the LAUs are expected to increase some, but not enough to reduce the LAUs' functionality as habitat or linkage areas.

Predator-control activities occur on federal and nonfederal lands. These activities can occur in lynx habitat, but more often are located at lower elevations outside lynx habitat. Activities are directed at specific animals or target species. Lynx trapped unintentionally can be released. Information from the U.S. Animal and Plant Health Inspection Service shows that no lynx have been taken incidentally in the Western Region for the past 30 years (USFS, 2008). Therefore, it is highly unlikely that predator-control activities would contribute to impacts already associated with the proposed action.

3.8.2 Forest Service Sensitive Species

The list in Tables 3-20 and 3-21 include sensitive species, or their habitats, that are located on the Dolores District of the San Juan National Forest (SJNF) or are located adjacent to or downstream of the project and could potentially be affected. A review of available information¹³ was conducted to assemble occurrence records, to describe habitat needs and ecological requirements, and to determine whether field reconnaissance was needed to complete the analysis.

No further analysis is needed for species that are not known or suspected to occur in the project area and for which no suitable habitat is present. All species listed below are in the SJNF Sensitive Fish and Wildlife Species List from the Rocky Mountain Region, Regional Forester's Sensitive Species list of August 11, 2014:

Table 3-20 Forest Service Sensitive and MIS Species that Are Not Known or Suspected to Occur and for which No Suitable Habitat Is Present

SPECIES	STATUS	KNOWN OR SUSPECTED TO OCCUR	SUITABLE HABITAT PRESENT
Mammals			
Desert bighorn sheep	Sensitive	NP	no
Fringed myotis	Sensitive	NP	no
Gunnison's prairie dog	Sensitive	NP	no
New Mexico meadow jumping mouse	Candidate, Sensitive	NP	no
River otter	Sensitive	NP	no

¹³ Sources of information included Forest Service records and files, the State Natural Heritage Program database, state wildlife agency information, and published research.

SPECIES	STATUS	KNOWN OR SUSPECTED TO OCCUR	SUITABLE HABITAT PRESENT
Spotted bat	Sensitive	NP	No
Townsend's big-eared bat	Sensitive	NP	No
Birds			
American bittern	Sensitive	NP	no
American peregrine falcon	Sensitive	NP	no
Black swift	Sensitive	NP	no
Brewer's sparrow	Sensitive	NP	no
Ferruginous hawk	Sensitive	NP	no
Lewis' woodpecker	Sensitive	NP	no
Loggerhead shrike	Sensitive	NP	no
Northern harrier	Sensitive	NP	no
Short-eared owl	Sensitive	NP	no
Western burrowing owl	Sensitive	NP	no
Western yellow-billed cuckoo	Candidate, Sensitive	NP	no
Insects			
Great Basin silverspot butterfly		NP	no

Table 3-21 Forest Service Sensitive and MIS Species where No Changes to Habitat Are Anticipated but Human Disturbance to Individuals Is Possible

SPECIES	STATUS	KNOWN OR EXPECTED TO BE PRESENT	SUITABLE HABITAT PRESENT	RATIONALE
Mammals				
American pine marten	Sensitive	S	yes	Marten are known to exist within the project area based on monitoring by the USFS. Changes to habitat are not anticipated. Human disturbance to individuals could occur, which may impact individuals, but the project would not affect the

SPECIES	STATUS	KNOWN OR EXPECTED TO BE PRESENT	SUITABLE HABITAT PRESENT	RATIONALE
				continued existence of the species or lead to a decline in population.
Hoary bat	Sensitive	S	yes	Associated with foliage in trees, mainly ponderosa pine, pinyon-juniper, and riparian forest. No habitat change is anticipated. Human disturbance is unlikely.
North American wolverine	Candidate, Sensitive	NP	yes	Tundra and boreal spruce-fir forest. Habitat changes are not anticipated from this project, but human disturbance to individuals could occur.
Rocky Mountain bighorn sheep	Sensitive	NP	yes	Open or semi-open habitats, often in precipitous terrain and adjacent benches and mesa tops, most commonly in alpine, grassland, shrub-steppe, and rocky areas. Habitat changes are not anticipated. Human disturbance to individuals could occur.
Birds				
American bald eagle	Sensitive	S	yes	Nests and roosts are usually found in open-branched trees near larger lakes, streams, rivers, and reservoirs. Habitat changes are not anticipated. Human disturbance to roost or nest sites could occur.
Boreal owl	Sensitive	S	yes	Mature spruce-fir forests with high canopy closure are located within the analysis area. Habitat changes are not anticipated. Human disturbance to individuals is possible.
Flammulated owl	Sensitive	S	yes	Owls depend on cavities for nesting, open forests for foraging, brush for roosting. Occupy open ponderosa pine or forests with similar features (dry montane conifer or aspen, with dense saplings). No change to habitat is anticipated. Human disturbance to individuals is possible.
Northern goshawk	Sensitive, MIS	S	yes	Aspen, mixed-conifer, and spruce-fir habitat is located within the analysis area. Habitat changes are not anticipated. Human disturbance at nest sites is possible.

Table 3-22 Forest Service Sensitive and MIS Species where Habitat Could Be Impacted by the Project and Human Disturbance to Individuals Is Possible

SPECIES	STATUS	KNOWN OR EXPECTED TO BE PRESENT*	SUITABLE HABITAT IS PRESENT	RATIONALE
Birds				
Olive-sided flycatcher	Sensitive	S	yes	Mature spruce-fir or Douglas-fir forests with preference for natural clearings, bogs, stream and lake shores with water-killed trees, forest burns and logged areas with standing dead trees. Habitat could be affected by this project.
Purple martin	Sensitive	S	yes	Mature aspen stands near water features are located within the analysis area. Personal-use firewood cutting can affect habitat. Human disturbance to nest areas is possible.
White-tailed ptarmigan	Sensitive	S	yes	Alpine tundra, especially in rocky areas with sparse vegetation. Summer habitats include moist, low-growing alpine vegetation. Canopy cover of willow at winter feeding sites preferred. Habitat could be affected.
Amphibians				
Boreal toad	Sensitive	S	yes	The analysis area contains aquatic features associated with this species. Habitat could be affected.
Northern leopard frog	Sensitive	S	yes	The analysis area contains aquatic features associated with this species. Habitat could be affected.

* **Presence Determination:** Suspected occurrence = S

3.8.2.1 American Marten

3.8.2.1.1 Affected Environment

Preferred marten habitat stretches across the project area. Site-specific surveys have been conducted within the project area since 2004 and do not show a decline in marten populations. Sites that have been continually surveyed include Barlow Creek, Black Mesa, Dunton Meadows, Roaring Fork, and a loop in Willow Divide.

3.8.2.1.2 Effects of Alternatives

Motorized vehicle use may temporarily displace individuals but will not affect viability of American marten across the project area. Marten may receive a net gain in nonmotorized habitat within the project area, which should increase the carrying capacity across the landscape.

3.8.2.2 *Boreal Owl*

3.8.2.2.1 Affected Environment

The potential nesting and foraging habitat for the boreal owl within the analysis area is widespread, with many snags in closed-canopy stands.

3.8.2.2.2 Effects of Alternatives

Seasonal displacement of individuals might occur in areas where motorized travel is allowed. This species could also be affected by a net gain in nonmotorized travel, which should increase expansion potential for individuals seeking new territories.

3.8.2.3 *Northern Goshawk*

3.8.2.3.1 Affected Environment

The Northern goshawk goshawk is a forest generalist because it occurs in all major forest types (coniferous, deciduous, and mixed). Mature forest structures appear to be an important component in the goshawk's nesting home range. Goshawk pairs tend to return to the same breeding territory year after year, occupying it from early March until at least late September.

3.8.2.3.2 Effects of Alternatives

Most nesting and foraging goshawk habitat within the analysis area would be unaffected. Territories would remain undisturbed and forest characteristics necessary for prey species would not be impacted. The proposed action may have a human disturbance impact on nesting habitat for a few select areas, but there will be a net gain in nesting habitat across the analysis area. Areas should be surveyed for active goshawk nests prior to new trail construction. (Design Features Appendix B).

3.8.2.4 *Purple Martin*

3.8.2.4.1 Affected Environment

The analysis area contains historic martin colonies and also potential habitat in the form of mature aspen stands with snag cavities within.

3.8.2.4.2 Effects of Alternatives

Displacement of individuals may occur in areas where motorized is newly permitted. However, within the project there will be a net gain in nonmotorized habitat across all the action Alternatives. Although the designated open road system would be virtually the same across all Alternatives, adherence to this road system should decrease off-road driving for personal-use firewood cutting, which might decrease the cutting of aspen snags. This would provide greater protection for existing colonies of purple martin.

3.8.2.5 *Boreal Toad*

3.8.2.5.1 Affected Environment

The RWD area has a wide variety of aquatic, potential habitat for the boreal toad. Ponds, wet meadows, wet stands of willow, small lakes, marshes, beaver impoundments, and glacial kettle ponds would offer

suitable breeding habitat for this species. Appropriate measures will be taken to protect all aquatic habitats if any maintenance or improvements are required. See the Watershed, Riparian and Wetland section of this DEIS for a description of effects to wetland habitat across the Alternatives.

3.8.2.5.2 Effects of Alternatives

Direct effects on boreal toad habitat would be minimal. Nonetheless, the protection of riparian, wetland, and open water areas during designation of new trails is essential. Because the project area is in historical habitat range and not current habitat range, this project will not affect any population's viability.

3.8.2.6 *Northern Leopard Frog*

3.8.2.6.1 Affected Environment

Although aqueous habitats are a central feature in its lifecycle, a frog may range a considerable distance from natal and breeding areas to a variety of other habitats. The northern leopard frog typically uses wet meadows, the banks and shallows of marshes, glacial kettle ponds, beaver ponds, lakes, reservoirs, streams, and irrigation ditches (Hammerson, 1999). Streams are often used as dispersal corridors, as are upland areas. The analysis area has a wide variety of these habitats.

3.8.2.6.2 Effects of Alternatives

See the Watersheds, Riparian and Wetlands section of this DEIS for the effects to northern leopard frog habitats across the Alternatives. See also the Design Features listed in Appendix B. Habitat would improve under all of the action Alternatives with the application of these Design Features; proper engineering and maintenance of road/stream crossings; and actions to improve wetlands on North Calico NRT, the headwaters of Fish Creek, and the Lone Cone area.

Short-term disturbance to individuals could occur during trail realignment, trail development, or road decommissioning. Long-term disturbance from off-road riding by ATVs in the Fish Creek area should lessen as a result of the alternatives and therefore lessen disturbance to individuals.

3.8.2.7 *White-tailed ptarmigan*

3.8.2.7.1 Affected Environment

White-tailed ptarmigan habitat includes alpine tundra (up to 13,100 feet) in or above stunted areas of willow and Engelmann spruce, on hillsides and ridges.

3.8.2.7.2 Effects of Alternatives

There are few willow galleries in the areas where motorized single-track trails cross alpine habitats and therefore limited effects.

3.8.2.8 *Other Forest Service Sensitive Species*

Table 3-23 Additional Forest Service Sensitive Species

Species	Habitat	Rationale/ Potential Impacts
Hoary bat	Ponderosa pine, pinion-juniper, and riparian areas. Roosts are often 10-16 feet high in tree foliage on the edge of clearings; however, bats also use woodpecker-made tree cavities and squirrel nests	Project area contains foraging and roosting habitat. Although seasonal displacement of individuals might

Species	Habitat	Rationale/ Potential Impacts
	for roosting. Males typically spend the summer in Colorado, but females rarely do.	occur, the species would receive a net gain in undisturbed habitat.
North American wolverine	Within alpine, boreal, and arctic habitats. At the southern end of its range (including Colorado), the wolverine inhabits high-elevation alpine environments.	Suitable habitat is present, but no species detections have been recorded in the analysis area.
Rocky Mountain bighorn sheep	Open, rugged, mountainous areas. High meadows near steep slopes.	Potential habitat exists within analysis area. Habitat is naturally fragmented. No known occurrence has been recorded.
American bald eagle	Tall trees, commonly near bodies of water where fish and waterfowl prey are available. Conifer forests and cottonwood riparian areas.	A known winter migrant on the San Juan National Forest in the project area. The majority of its winter habitat in this area occurs on private land.
American peregrine falcon	Open country and high (>200 feet), vertical cliffs (for nesting).	Known to occur within the analysis area. No nesting habitat has been identified that could displace individuals.
Black swift	Mountain cliffs and canyon walls, typically very close to water, often near or behind waterfalls. Nests in colonies usually on inaccessible ledges or cliff walls.	Might migrate through the analysis area.
Lewis' woodpecker	Open ponderosa pine forests. The analysis area contains potential habitat, and individuals have been observed in it.	Individuals could be seasonally displaced in newly designated motorized routes. Potential for habitat loss in places, but also a net gain in habitat across the project area.

3.8.3 Migratory Birds

Discussions of effects to Forest Service Sensitive bird species above also provide information about effects to migratory birds. Individuals could be seasonally displaced during construction or reconstruction activities. The Design Features Appendix B include the situations where work crews would consult the District Biologist prior to performing ground disturbing or tree cutting activities. Effects from these types of projects is short term.

Recreation use of trails is not anticipated to have a major effect on migratory bird habitat because of the presence of the habitat between roads and trails which provides many acres of summer nesting habitat for migratory birds.

3.8.4 Management Indicator Species

Every national forest is managed under a *Forest Plan* that establishes overall management direction—including the maintenance of healthy populations of fish and wildlife species. To facilitate analysis, the *Plan* identifies a subset of species, called the Management Indicator Species (MIS), which represents the full range of species in that particular forest.

Some MIS species are present in the analysis area, but the project proposal and its effects are not believed to be a limiting factor for the habitats they represent as MIS species. Refer to the MIS Assessments in the project files for information on population and habitat trends. None of the alternatives would affect or change the habitat or population trend at the project or Forest level. Those species are: Abert's squirrel, and hairy woodpecker.

Two MIS (Elk and American pine marten) are discussed in details because habitats for these species dominate the project area. Elk use the analysis area in the winter and summer, and for calving in the spring. Marten populations are spread across the analysis area and are tied to mature coniferous and deciduous-coniferous forests.

Table 3-24 San Juan National Forest Management Indicator Species¹⁴

Species	Presence	Projects Effects	Population Trend/ Rationale
American pine marten	K	MIH	Population trend is stable within the project area.
Elk	K	MIH	Population trend currently meets state population objectives.

Project Impacts are: ~~No Impact (NI)~~, May impact individuals or habitat (MIH)

3.8.4.1 Elk

Elk is a Management Indicator Species analyzed in detail for this project. Elk were chosen as an MIS for this analysis because they present in the analysis area and elk are distributed broadly across the landscape. In addition, quantitative Forest level population data exists for this species and is monitored annually.

3.8.4.1.1 Affected Environment

Background

Elk are identified in the *Forest Plan* as an early successional MIS. Elk have three broad habitat requirements: feeding, cover, and rearing. Because mule deer and elk utilize forage and cover, elk were selected to represent both of these big-game species. Topography, elevation, weather, livestock grazing, travel management, soil types, and plant communities are the main factors influencing habitat condition and capability. Winter range is the most critical for elk, but summer range and production areas also can be critical when dry conditions cause a decrease in forage. Elk populations have grown in the past two or three decades, and currently exceed the Colorado Parks and Wildlife objectives. Although habitat quality is important, populations are largely influenced by human population growth and land development (USDA, 2014).

The Disappointment Creek elk management area (Data Analysis Unit E-24) consists of Game Management Units 70, 71, 711, 72, and 73. It has an area of 5,055 square miles and encompasses portions of Dolores, Montezuma, Montrose, and San Miguel Counties. In 1987, the estimated

¹⁴ As identified in the 2013 *San Juan National Forest Land and Resource Management Plan*

population of elk was approximately 14,500 and was probably rapidly growing. In 1989, the cow harvest was increased dramatically in an attempt to stop the herd growth, and stayed relatively high through 1994. Concurrently, the estimated population exceeded 16,000 but then was reduced to approximately 14,000. Local managers at that point felt the herd had been “reduced” sufficiently and relaxed the cow harvest. This allowed the herd to rapidly grow again, and even though antlerless harvest has been ramped up since 1998, the herd has continued to increase and may now exceed 19,000 (CPW Pop Numbers Report, 2014).

Elk generally occupy the entire EAU, but occur at highest densities in the central montane portions comprised of pinyon-juniper, mountain shrub, ponderosa pine, aspen, spruce, and fir.

Analysis Area

As shown in Table 3-25, the analysis area encompasses 256,377 acres, 244,554 of which are on the National Forest. It contains 154,132 acres of state-designated production area¹⁵. Also within the analysis area are 57,421 acres of forage and 179,566 acres of cover. This indicates that the majority of the analysis area is utilized by elk, mostly in the summer. Only 51,454 acres are state-designated winter range.

The table and discussions that follow describe elk habitat in more details including 1) production area, and 2) security area. The table displays area acreages followed by and explanation of the term ‘security area’.

Table 3-25 Analysis Area Summary of Acres¹⁶

Project Summary	Acres
Total Acres in Project	256,377
Total acres of National Forest in Project	244,554
Production Area	154,132
Winter Range	51,454
Security Area in Alternative A	106,557
Security Area in Alternative B	114,330
Security Area in Alternative C	109,779
Security Area in Alternative D	115,966
Security Area in Alternative E	139,029

¹⁵ CPW defines production habitat as ‘That part of the overall range of elk occupied by the females from May 15 to June 15 for calving.’ The key part of this definition is overall range and occupied by females.

¹⁶All of these acres were calculated using ESRI ArcGIS mapping software.

A GIS exercise was used to estimate security areas. To determine habitat effectiveness within the analysis area, all motorized roads and trails were buffered a half mile on either side of the center line (1 mile total). Proffitt, et al. (2013) found that elk move into security areas and private lands when pressured by rifle hunting. They also found that elk use private lands as security areas during hunting season. The private lands within the analysis area were not recognized as security areas for this analysis. This is noteworthy because it indicates that the amount of security habitat within that analysis unit may be 11,823 acres larger.

The size of security areas within the analysis area, shown in Table 3-26, were determined by buffering all motorized roads and trails with a half mile on either side of the centerline (1 mile total). These inner security area polygons were then analyzed for both forage and cover in order to examine their effectiveness (Security areas smaller than 250 acres were not considered in the analysis.) The formula used for forage and cover follows:

Security areas (See Table 3-26 below) were determined within the analysis area by buffering all motorized roads and trails with a half mile (either side of centerline- 1 mile total) buffer. These inner security area polygons were then analyzed for both cover and forage to be able to examine their effectiveness (See Table 3-27). The vegetative formula used for cover and forage are as follows: Forage: 1) Grass-forb, 2) Shrub-seedling, and 3a) Sapling-pole <40% canopy cover (cc) 4a) Mature <40% cc, as highly valuable, and Cover: 3b) Sapling-pole 40-69% cc, 3c) Sapling-pole >69% cc, 4b) Mature 40-69% cc, 4c) Mature >69% cc, and 5) Old-growth as highly valuable.

The forage-to-cover ratio within security areas was about 20 percent forage and 70 percent cover. Forage and cover types were delineated by vegetation types, and were deemed to be either forage or cover. For example, mature aspen stands were categorized as cover rather than forage, even though these stands provide both cover and forage. This indicates that cover was accurately estimated but forage was underestimated to a large degree.

Table 3-26 Security Area Size, by Alternative

Alternative	Total Acres	Smallest Security Area (in Acres)	Largest Security Area (in Acres)	Mean Average Size of Security Area (in Acres)	Standard Deviation
A	122,579	381	34,591	7,210	10527
B	112,968	276	22,917	4,519	5166
C	125,096	276	34,549	6,584	8818
D	130,282	276	34,549	8,143	9680
E	139,029	276	37718	9,269	12382

Table 3-27 Security Area Habitat Effectiveness Detail

Elk Habitat Summary		Acres	Percentages
Cover		179,566	70 %
Forage		57,421	22 %
Cover in Production		115,392	75 %
Forage in Production		35,100	23 %
Cover in Winter (all)		37,582	73 %
Forage in Winter (all)		10,268	20 %
Cover in Security Alternative A		72,445	68 %
Forage in Security Alternative A		21,733	20 %
Cover in Security Alternative B		78,894	69 %
Forage in Security Alternative B		22,745	20 %
Cover in Security Alternative C		75,770	69 %
Forage in Security Alternative C		21,442	20 %
Cover in Security Alternative D		80,723	70 %
Forage in Security Alternative D		22,732	20 %
Cover in Security Alternative E		87,170	63 %
Forage in Security Alternative E		24,154	17 %

Migration data from CPW show that elk migrate out of the security areas through major road corridors on their way to winter habitat. This can partially be explained by looking at the overall vegetative cover. Every area shown to be a migration corridor has cover for the elk when they need to cross or follow

roads. When elk are forced to abandon their security areas in winter, the landscape in the analysis area still provides cover connectivity for the migration of these animals. So even though the security areas lack connectivity, adequate cover is provided between the security areas.

3.8.4.1.2 Effects of the Alternatives

The analysis area contains large tracts of public lands that provide essential habitat to a wide range of wildlife. For big game, the maximum disturbance occurs when human activities coincide with critical wildlife use periods. Animals that are stressed and/or displaced from preferred habitats move to areas that are less desirable. Displaced animals also seek undisturbed habitats on adjacent private lands that sometimes contribute to game damage problems.

Human activities can disturb wildlife. Some activities may have serious consequences as the result of interactions between recreational disturbances and wildlife, while others have little or no effect. Travel management related impacts on wildlife vary with the volume, timing, and type of travel; species of wildlife in the area; habitats involved; time of day or season of year; and a myriad of other factors (general health of the animals, etc.).

Roads and motorized trails¹⁷ have the potential to be the most influential element in relationship to elk habitat on public land. Roads can have many effects on habitat, but the most noticeable to big game is human disturbance. Roads provide access into areas that normally would only receive light human intrusion. This association between human encroachment and elk disturbance is played out in its extreme during the hunting season. In order to mitigate the effects of roads, maximum road density by management area were established by the Forest Plan (1 mile per square mile).

The predictability of a given activity shapes wildlife responses to it. When animals perceive a disturbance as frequent enough to be “expected” and non-threatening, they show very little overt response. For example, elk are easily conditioned to repeated patterns of human activity within their home range but are also keenly aware of deviations from normal patterns. Research has shown that elk seldom are alarmed at normal disturbance-type activities such as vehicular traffic, camping, fishing, or other recreational activities beyond a threshold distance of ½ mile. Activities within this distance, however, resulted in evasive movements by elk to reestablish and maintain a ½ mile buffer between themselves and the human activity.

The frequency and magnitude of disturbance affect the degree to which wildlife are affected. A number of studies have established the consistent year-round influence of motorized vehicles on elk use of preferred habitats. Many sources have documented a decline in elk use of areas adjacent to roads. Elk habitat effectiveness is adversely influenced by the presence of roads and trails that are open to vehicular traffic. In general, habitat effectiveness decreases in proportion to the amount of open (motorized) routes per square mile of habitat. Under all alternatives the road densities within the analysis area are below the 1 mile per square mile road density requirement in the Forest Plan.

The magnitude of disturbance to elk throughout the analysis area increases dramatically during the big-game hunting seasons. The hunting seasons begin with archery in late August and run consecutively through the end of the fourth rifle season in mid-November. Roads and trails that normally receive little

¹⁷ Research exists for road related effects (full size vehicles, ATVs, UTVs) on big game but very little research exists specific to motorcycle use of single track trails. For this analysis, the effects are assumed to be similar.

or no use are sometimes used heavily on a daily basis during hunting seasons. Hunted populations of elk are extremely wary of people and sensitive to danger because of the annual hunting seasons. Studies have documented that elk behavior changes in response to the hunting season. Elk avoid areas adjacent to roads with vehicular traffic, especially during the hunting season. Elk also respond to hunting pressure by moving to adjacent undisturbed areas such as private lands.

Reducing the number of open routes in the travel management plan during times of highest disturbance to elk habitat would increase security areas throughout the planning area. The desire is to encourage elk to remain on the public lands for as long as possible in the fall, instead of being displaced onto private land where substantial agricultural damage can and does occur.

Acres of habitat influenced by open roads and motorized trails were delineated for this analysis area. GIS information along with information from Colorado Parks and Wildlife was used to determine the location of potential elk security areas that are ½ mile from a system road and/or motorized trail.

The habitat security areas analyzed for this area represent large (minimum of 250 contiguous acres), relatively unfragmented tracts of public land. These areas are a minimum of ½ mile (from center line which, equals the 1 mile total) from any road or trail open to motorized use. These particular habitat security areas help offset the impacts of intensively roaded portions of the analysis area and contribute to the maintenance of viable populations of native wildlife species in natural patterns of abundance and distribution.

Based on the above analysis of security areas and associated cover and forage along with connectivity, habitat effectiveness for elk is maintained across all alternatives. Although some seasonal displacement of individual elk will occur along roads and motorized trails, there are sufficient security areas with adequate cover and forage across all alternatives.

The size of these already effective habitat areas increases when motorized trails are converted to nonmotorized uses only. Thus Alternatives E and has some of the largest sized security area patches compared to Alternatives B and C.

Spring timing restrictions on motorcycles, ATVs and OHVs travel on trails also results in a similar expansion in the size of wildlife security habitat during the time when the restrictions are in place. When timing restrictions are implemented the security areas along the Calico NRT system, and East Fork trail increase in size. This increase in security area size would exist until July 1st in Alternative B and until June 1st in Alternatives C, D and E when riding would be allowed to begin. It is important to note that timing restrictions are only proposed for trails under all alternatives. So ATV/OHV use of the Taylor OHV, Groundhog OHV and Lone cone OHV trails would not begin until June or July depending on the alternative, but use of the Forest Roads in those areas could begin earlier depending on snowmelt.

Fall timing restrictions on motorcycle use reduce human disturbance to elk during the season when most human disturbance occurs. Heavy use of the road and OHV trails would continue to pressure wildlife but restricting motorcycle use of single track trails increases the size of the security areas near those trails. Thus with the fall timing restriction in place security areas in Bear Creek, around the Calico Trail System and East Fork would appear. Security Area maps by Alternative are located in the project file.

3.8.4.1.3 Cumulative Effects

The area for cumulative effects analysis discussions is the RWD analysis area. Except for wetlands, this project would not modify habitat through vegetation management, prescribed fire, or similar actions and therefore would have no cumulative effects. Riparian/wetland habitats close to roads and trails are affected as described in the Watershed, Riparian, Wetland section of this DEIS. Overlapping physical effects could occur at these sites from livestock grazing, private land development, and future vegetation management treatments (One vegetation management project has been proposed for the Taylor and Stoner Mesas). Such treatments would likely include project Design Features that would limit impacts to wetland habitats.

Disturbance effects that would overlap in time and space with the use of the RWD road and trail system include nonmotorized recreation use of the trail system, livestock grazing, mineral exploration or development, activities on private lands, vegetation management projects, or special use recreation events. These activities would add to the disturbance effects discussed above.

Vegetation management and mineral exploration activities could occur within the elk security habitat, causing a short-term reduction in habitat effectiveness. However, these types of activities have been infrequent in recent years and are expected to remain infrequent in the future. The proposed vegetation management project on Taylor and Stoner Mesas will add disturbance effects in those areas for approximately five years.

The nonmotorized use of single-track trails creates additional human disturbance to elk, which add to the effects described above. Elk will distance themselves from hikers, horse riders, and mountain bike riders, especially if off-leash dogs are present. However, the distance that elk will travel away from nonmotorized users might be less than the distance they will travel away from motor vehicle noise. A qualitative estimate of nonmotorized recreation use in the RWD was considered for this analysis and, under all Alternatives, this added human disturbance is not anticipated to change the habitat effectiveness of elk security areas.

Cross-country walking during hunting season will cause elk to move into drainages or other patches of land that have no disturbance. The benefit of fall restrictions on motorcycle use during rifle seasons is offset by the presence of walk-in hunters in these areas.

Because elk will move into adjacent pastures not occupied by cattle, horse riders moving livestock along trails is an added disturbance.

Limitations on cross-country motor vehicle travel provide wildlife security and will be an important factor in maintaining elk habitat.

3.8.4.1.4 Adaptive Management

Although populations are currently meeting objectives for the EAU, there has been a downward trend that could result in a dip below objectives in the future. The following adaptive management actions could be considered if that happens, or if CPW monitoring shows a need (i.e., if elk populations drop below numbers set in the *Disappointment Herd Management Plan*):

- Augment forage/cover to mitigate potential issues with insufficient availability
- Implement timing stipulations for critical areas
- Modify recreational use temporarily within specific areas
- Adjust tag numbers (state)
- Collar and track elk to evaluate movements and identify causal affects (state and Forest Service)
- Assess physiology of elk to determine causal affects (state and Forest Service)

3.8.4.2 American Marten

3.8.4.2.1 Background

The American marten (*Martes americana*), also known as the pine marten or simply the marten, is a carnivorous mammal roughly the size of a small house cat. It is a member of the weasel family (*Mustelidae*) and is one of seven species in the genus *Martes*. The only other member of the *Martes* group in North America is the fisher (*M. pennanti*), which is much larger and occurs over a much narrower geographic range than the marten does. One subspecies (*M. a. origenes*) occurs in Colorado (Fitzgerald et al., 1994). The marten is primarily an inhabitant of upper montane to boreal forests in the western United States (ibid.).

In Colorado, the marten occurs in most coniferous forest in the higher mountains (Fitzgerald et al., 1994). Although they are most commonly observed in spruce-fir forests, marten are occasionally seen in lower-elevation, mixed-conifer forests. San Juan Public Lands (SJPL) and CPW personnel conduct snow track surveys annually. Regular and widespread sightings and tracks on the snow have led to the conclusion that martens are well distributed and reasonably abundant in suitable habitat on the Forest. Marten populations are distributed across the northern and eastern portions of the analysis area. In addition, in 1992 the CPW conducted a wolverine survey on the SJNF that detected martens on roughly 80 percent of bait stations.

Marten are primarily carnivores of small mammals and prey on a wide variety of species. They are somewhat opportunistic regarding the kind of species taken and the frequency of taking, which vary greatly depending on availability (Martin, 1994). Their most important prey in the West are red-backed voles, pine squirrels, and various species of *Microtus*. Other prey include insects, birds, bird's eggs, and even fish. Marten will also take carrion when available, especially during the winter (Strickland et al., 1982). During late summer and fall, soft mast is consumed, especially berries of *Vaccinium* and *Rubrus* (Buskirk & Ruggerio, 1994). Changes in small mammal prey can affect the carrying capacity of marten habitat (Strickland et al., 1982). Due to their high energy requirements, females and juveniles are most affected by food shortages (ibid.).

Habitat – particularly the loss of habitat components – is perhaps the most important limiting and controlling factor for marten populations, since it affects foraging, resting, breeding, and dispersal. Other limiting factors include fragmentation and geographic isolation, prey availability, low population density, low reproductive potential, predation, competing predators, trapping, weather, parasites, and disease. Marten habitat use within their home range is much more limited during the winter months.

3.8.4.2.2 Affected Environment

Five survey routes are monitored annually within the project area. These routes look for tracks in the snow, and route lengths vary from five to 15 miles long. Even though surveys rely on biologist ability to discern sometimes obscure tracks, they provide a look at how marten populations in the area are faring. Table 3-28 below shows survey results for marten for the past 10 years.

Table 3-28 American Pine Marten Survey Results

Pine Marten Survey Results												
	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Barlow Creek	Null	1	6	0	3	Null	2	2	Null	Null	Null	4
Black Mesa	Null	6	0	0	1	Null	2	1	4	Null	Null	1
Dunton Meadows	7	12	7	1	0	Null	1	5	3	Null	Null	1
Roaring Fork	Null	7	2	0	0	Null	3	Null	Null	Null	Null	1
Willow Divide	17	1	Null	1	2	Null	5	Null	2	0	Null	Null

Note: Survey protocol changed after 2007. Prior to the 2007-2008 season, all tracks were counted without determining whether those tracks belonged to the same individual. After 2008, tracks were evaluated to see whether they belonged to the same individual, and that individual was only counted once.

3.8.4.2.3 Effects of the Alternatives

Martens are somewhat curious and adaptable to human presence, and will occasionally approach humans. They will also den in human structures near suitable habitat and will seek out human food when available (Buskirk & Ruggiero, 1994). Considering this apparent tolerance of humans, low levels of dispersed recreational activities, such as hunting, hiking, skiing, and snowmobiling, are unlikely to have a significant impact on individuals.

Firewood gathering occurs along Forest Roads or in association with dispersed camping and is not extensive or concentrated. Heavy snow related recreation occurs in some areas which could add addition stress and compact open spaces in the subnivean environment potentially affecting prey and winter resting sites.

Over the last 20 years, we have observed increased recreational use across the Forest. The FS has no specific data on recreational impacts on marten or marten habitat but suspect that more use has caused disturbance, displaced individuals, and reduced habitat effectiveness in high-use areas. Continued observance of martens in high-use areas, such as developed recreation sites, suggests that use of particular areas is related to the frequency and duration of disturbance.

Although the alternatives would most likely cause some seasonal displacement of individual martens, it would probably not result in a loss of viability within the planning area, nor would it likely lead to federal listing or a loss of species viability range-wide.

3.8.4.3 Forest Plan Guidelines Related to Terrestrial Wildlife

The 2013 *Forest Plan* Standards and Guidelines listed in Table 3-29 affect management in the RWD area.

Table 3-29 Forest Plan Guidelines for Managing Terrestrial Wildlife

Forest Plan Guideline	How Addressed
<p>Projects or activities that <i>adversely impact</i> pronghorn and elk production areas should be limited or avoided. This will keep reproductive success from being negatively impacted from management activities by using access restrictions during the following periods:</p> <ul style="list-style-type: none"> • Pronghorn: May 1 – July 1 • Elk: May 15 – June 30 	<p>Per the analysis above, security areas exist in size, effectiveness, and connectivity to provide habitat. An adverse effect to production habitat is not specifically described. However, because motorcycles travel long distances in a single day and because ATVs and UTVs riding on trails can also add to disturbance effects, the Alternatives propose springtime restrictions</p> <ul style="list-style-type: none"> • Alternative A – No timing restrictions • Alternative B – Riding begins June 1 • Alternatives C, D, and E – Riding begins July 1 • All Alternatives meet this guideline.
<p>2.3.62 Ungulates: Projects or activities in big-game critical winter range, winter concentration areas, severe winter range, production areas, and important migration corridors should be designed and conducted in a manner that <i>preserves and does not reduce habitat effectiveness</i> within those mapped areas.</p>	<p>Winter habitat that occurs in the project area is not affected under any Alternative during the winter months.</p> <p>See analysis above for effectiveness and connectivity of habitat.</p>
<p>2.3.63 Ungulates: In order to provide for healthy ungulate populations capable of meeting state population objectives, anthropomorphic activity and improvements across the planning area should be designed to maintain and continue to provide effective habitat components that support critical life functions. This includes components of size and quality on the landscape providing connectivity to seasonal habitats (wildlife travel corridors), production areas, critical winter range, severe winter range, and</p>	<p>See analysis above</p>

Forest Plan Guideline	How Addressed
winter concentration areas, along with other habitat components necessary to support herd viability.	
<p>Route Densities for Wildlife Habitat: The intent of this Guideline is to ensure no net loss of existing habitat effectiveness within the areas listed below. In order to maintain wildlife habitat effectiveness of SJNF lands, road and motorized trail densities should be addressed when analyzing and approving management actions that affect motorized routes. Where management actions would result in road and motorized trail densities exceeding 1 mile / square mile on SJNF lands in the areas listed below, actions should be designed to maintain habitat effectiveness on SJNF lands throughout each mapped polygon. Habitat effectiveness for this Guideline is considered maintained when road densities within the CPW-mapped areas on SJNF lands listed below are less than or equal to 1 mile / square mile. When road densities exceed 1 mile / square mile within the CPW mapped areas on SJNF lands listed below, densities should not be increased without mitigation designed to maintain habitat effectiveness. <i>(See Forest Plan for how to calculate road densities.)</i></p>	CPW-mapped production habitat was used to calculate route densities. The route densities under all Alternatives fall below 1 mile / square mile.
2.5.24 Sediment delivery to streams occupied by MIS or threatened, endangered, or sensitive species should be avoided.	Alternative B provides the most protection from potential sediment delivery into Spring Creek.
2.5.25 Activities that may cause sedimentation to amphibian habitats should be minimized.	See the Fens, Unverified Fens and Riparian vegetation effects discussion in the Water section of this DEIS. Design Features minimize the potential for sedimentation into amphibian habitats.

3.9 AIR

3.9.1 Affected Environment

All areas with the RWD landscape (including the Lizard Head Wilderness) are currently classified as Class II Airshed. All public lands within the planning area currently meet air quality standards.

3.9.2 Effects of Alternatives

3.9.2.1 Emissions

Air quality impacts from vehicle emissions are influenced by the effectiveness of smog control devices on cars, the amount of traffic, and duration of engine idling. The scope of this analysis is such that broad assumptions must be made to estimate impacts between the Alternatives.

Nitrogen oxide (Nox) forms when fuel burns at high temperatures, as it does in motor vehicle engines. Emissions associated with vehicle traffic include Nox and carbon emissions from vehicle tailpipes. Vehicles that run on diesel fuel also emit sulfur oxides.

Exhaust emissions from vehicles would be short-term and localized. These emissions are not regulated other than by methods described above.

Vehicle traffic and associated emissions would increase slightly as a result of increased future demand and use on the transportation system under any of the Alternatives. None of the Alternatives is expected to cause, or contribute to, violations of state or federal air quality standards. Nor is any Alternative expected to cause measureable effects on ambient air quality within the analysis area.

Four-stroke engines are less polluting than two-strokes engines are; however, there has been no evidence that emissions are so problematic in the analysis area that using four-stroke engines should be required. Nor is there evidence that emission standards should be revised.

3.9.2.2 Fugitive Dust

When a vehicle travels an unpaved road, the force of the wheels tends to pulverize surface material and generate “fugitive dust” particles. These particles are generally large enough that long-range transport does not occur. Such fugitive dust typically increases during timber sales or other activities with highly concentrated travel by large vehicles on unpaved roads, but these situations are usually addressed through Design Features associated with each specific project. Fugitive dust generated from road and trail use is expected to be short-term and localized.

3.10 CULTURAL RESOURCES

“Heritage resources” is a broad term that refers to cultural properties and traditional values. A cultural property may be the physical remains of archeological, historic, or architectural sites and/or a place of traditional cultural use. Because these resources are nonrenewable and easily damaged, laws and regulations exist to help protect them.

Federal agencies consider the potential effects of their management activities on historic properties by conducting surveys to locate cultural properties and by assessing the results of those inventories. The

National Historic Preservation Act (NHPA) and its implementing regulations require that agencies consider the effects of their undertakings on historic properties that have been determined eligible for the National Register of Historic Places (NRHP). Federal agencies must consider American Indian traditional uses, belief systems, religious practices, and lifeway values as directed by the Archeological Resources Protection Act, the NHPA, the Native American Graves Protection and Repatriation Act, and the American Indian Religious Freedom Act.

3.10.1 Affected Environment (Cultural Setting)

A comprehensive synthesis of the cultural history of southwest Colorado is contained in *Colorado Prehistory: A Context for the Southern Colorado River Basin* (Lipe, Varien, & Wilshusen, 1999) and in *Colorado History: A Context for Historical Archaeology* (Church et al., 2006). For an overview of the cultural resources of the SJNF, the reader is referred to *An Overview of the Archaeological Resources in the San Juan-Rio Grande National Forests: Mancos-Dolores, Columbine, and Pagosa Districts* (Duke, 1998).

Both historic and prehistoric sites exist within the RWD analysis area. Prehistoric sites include small seasonal-use campsites and resource procurement sites. Historic properties include sites that are related to early mining, logging, railroading, ranching, and Forest Service administrative facilities and activities.

During the prehistoric and protohistoric periods, the area appears to have been used primarily for seasonal resource gathering. Archaic sites exist within the area, as do some sites that suggest use by Ancestral Puebloan groups. Primarily, the area was used both prehistorically and historically by the Ute. Prehistoric and protohistoric sites in this area tend to be represented by small, scattered open camps, lithic scatters and lithic Isolated Finds, and by culturally scarred trees (usually as Isolated Finds).

The watersheds for the Dolores and West Dolores Rivers were used historically for timber harvesting, mining exploration, and for both sheep and cattle grazing. The town of Rico originated as a mining community, and the mountains surrounding the town contain both large and small mining claims (mostly abandoned). From 1891 until the early 1950s, the Rio Grande Southern Railroad provided rail service through Rico and along the Dolores River corridor, and included a side branch (the Enterprise Branch) that serviced the Enterprise Mine – the largest and most productive mine in the area (McCoy & Collman, 1997). Historic grazing use is represented by stock driveways (still in use for stock trailing and as hiking trails) and by cabin ruins and aspen dendroglyphs.

During the 1930s two SJNF administrative facilities were constructed by the Civilian Conservation Corps within the current analysis area. These were the Stoner and the Dunton Guard (Ranger) Stations. The Stoner facility was decommissioned and removed during the 1970s, but the Dunton facility is still intact and continues to be used seasonally as temporary housing for Forest Service field crews working in the area.

3.10.1.1.1 Surveys

All, or portions of, 162 cultural resource inventories have been completed within the current project area. This number includes both block and linear inventories, and both Class III (intensive) and Class II (sample) surveys. This work supported a wide variety of projects, including range allotment

improvements and management plans, timber sales, prescribed burning, spruce planting, mineral extraction, recreation facility improvements, utility easements, roads, lands, and special uses projects.

Roads and trails within the RWD analysis area were digitally buffered in GIS; that is, only sites falling within certain buffer zones were considered to be in the Area of Potential Effect for this project. Trails were given a buffer of 50 meters on each side of the center line of the trail, and roads were given a buffer of 100 meters on either side of the center line of the road. Files for sites within the buffer zone were examined to determine if they were potentially at risk for impacts.

3.10.2 Effects of Alternatives

The effects are similar across all the Alternatives including the No Action Alternative.

Road and trail use can affect sites either directly or indirectly. Examples of direct effects are ground disturbance of surface and subsurface deposits that would have otherwise remained intact. Direct effects also include the crushing, breaking, and/or scattering of cultural material when motorized travel crosses through heritage sites. Much of this may happen without the motorized user even being aware of the damage.

Indirect effects can be caused by deflation (erosion due to downcutting in a road or trail surface, which exposes site deposits) or by deposition (movement of soil that covers an adjacent site, affecting future discovery and/or management).

Inadvertent damage to sites can also occur from all types of recreational road and trail use. Closing or rerouting roads and trails and/or installing physical barriers have proven to be effective in deterring or mitigating damage to cultural sites.

Restricting motorized travel to designated routes would reduce the potential for heritage resource damage by limiting the number of areas affected by trails, and by limiting access by vandals and looters into some sensitive areas. By changing management to designated routes only, there should be no increase in disturbance (often caused by “pioneered” or user-made roads or trails). Sites that were disturbed in the past will have a chance to revegetate, which will help to control erosion.

Heritage resource sites that are located on or adjacent to roads, trails, or other areas in this analysis area might require avoidance or other mitigation efforts to ensure that the construction, decommissioning, maintenance, or use of these facilities does not cause any damage.

The interdisciplinary team has not located all the potential cultural sites associated with this project, nor has it established the preferred methods for decommissioning roads, constructing and realigning trails, or taking similar actions. Therefore, separate cultural resource inventories and State Historic Preservation Office consultations for these actions will be completed prior to implementation (see also the Design Features in Appendix B). All cultural resource sites determined to be eligible for the NRHP, and sites that require further work before a determination of eligibility can be made, will be protected from potential impacts by avoidance and/or other mitigation, as needed.

Sites should be protected by avoidance whenever possible. Other possible mitigation methods include monitoring; conducting site condition assessments; evaluating and testing unevaluated sites for determination of eligibility to the NRHP; modifying decommissioning methods to avoid site disturbance;

realigning trails around sites; platting over trails through sites; and placing boulders or other barriers to protect sites.

Should any previously unrecorded cultural resources be discovered during the course of any activities relating to this project, those activities will cease in the immediate area of the discovery until a qualified archaeologist can visit the location and make a complete assessment of the resource.

On one hand, realigning or developing a trail can potentially affect cultural resources, as can decommissioning or reconstructing a road. On the other hand, decommissioning multiple roads can be highly beneficial. Benefits come from limiting access to cultural resource sites and from reestablishing vegetation along the routes, which can help to stabilize the soil. Decommissioning roads can also limit erosion and the amount of dust or sediment moving onto or across a site.

The preliminary determination for the RWD travel analysis is No Adverse Effect on any District cultural resources listed on, or eligible for listing on, the NRHP.

3.10.3 Tribal Consultation

Consultation regarding roads and trails in the project area began in 2009 with the first round of travel management planning on the Dolores District. Comments during previous consultation regarding travel management included consideration of the Brunot Treaty which is discussed in more detail below.

In August 2014, during the Tribal Consultation meeting at the Anasazi Heritage Center, tribal representatives were provided an overview of the project. Tribal consultation will continue to allow for discussions of the alternatives described in this DEIS.

3.10.4 Brunot Treaty

The Brunot Agreement, ratified by Congress in 1874, withdrew over 5,000 square miles in the mountains of southwestern Colorado from the 1868 Ute Reservation. The Brunot cession area includes 3,857 acres (including 216 acres of private land) in the southeastern corner of the Monument (Map 15). The agreement, entered into between the United States (as represented by Felix Brunot) and the Ute Indians in Colorado, was passed into law (18 Stat., 36) by the House of Representatives and the Senate of the U.S. Congress on April 29, 1874 (after Congress decided in 1871 that the U.S. would no longer make treaties with Native American tribes; yet continued to interact with Native American tribes in much the same manner through executive orders and agreements enacted as statutes). Under the “reserved rights doctrine,” hunting rights on reservation lands relinquished by the Ute were retained; that is, the tribes retained such rights as part of their status as prior and continuing sovereigns. Article II of the Brunot Agreement specified that “the United States shall permit the Ute Indians to hunt upon said lands so long as the game lasts and the Indians are at peace with the white people.” This is considered a valid existing right that, under the terms of the Proclamation, must be honored.

These hunting rights currently apply only to the Ute Mountain Ute Indian Tribe, acknowledged when the tribe sued the State of Colorado for their historical hunting rights in 1978. The rights were granted to the tribe under a consent decree that gives enrolled members of the Ute Mountain Ute Tribe the right to hunt deer and elk in the Brunot area for subsistence, religious, or ceremonial purposes. The consent decree specifies that tribal members may hunt deer and elk without a state license year-round, providing that they obtain a tribal hunting permit. Other game animals may be hunted without a license and without bag limits, but only during hunting seasons established by the Colorado Parks and Wildlife.

In exercising their Brunot hunting rights, the Ute Mountain Ute must adhere to Federal regulations designed to protect natural and cultural resources.

Access will be provided to the Tribe, members of the Tribe, the Tribe's Tribal Historic Preservation Office and to the Tribes Brunot Wildlife Commission to ensure that Tribal members seeking to exercise their hunting and gathering rights under the Brunot Treaty are able to do so under the terms of the Treaty.

As described in Chapter 3 of this DEIS, access to the RWD area remains similar to current conditions in that roads lead to similar areas. Redundant routes including unauthorized routes may be re-vegetated. This project only applies to general public use of the road and trail system. Administrative or permitted access decisions are made separately on a case by case, site specific basis.

Public Uses and Forest Management

3.11 RANGELAND AND WEED MANAGEMENT

Sections below that describe effects to rangeland management. Weeds control is a part of maintaining healthy rangelands and is incorporated into this section. This analysis draws from staff knowledge of the range and weed program, allotment notes and conversations with range permittees.

3.11.1 Affected Environment

3.11.1.1 Current Allotments

Approximately 115,000 acres (45 percent) of the RWD area is suitable for grazing by livestock. Table 3-30 reflects the status of the 15 allotments that lie, primarily, within the project area.

Table 3-30 Allotments within the RWD Area

Allotment	Suitable Acres	Current Grazing System	Number of Animals (Cattle, Unless Specified Otherwise)	Permit Dates
Bear Creek	493	Vacant	0	N/A
Coke Oven	32,610	6-Pasture Rotation	1,000 sheep	7/1 – 9/30
Deer	8,857	3-Pasture Rotation	135	6/28 – 10/10
Divide	18,001	Vacant	0	N/A
Expectation	5,677	Vacant	0	N/A
Fish Creek	N/A	Closed	N/A	N/A
Rio Lado	4,429	Vacant	0	N/A
River Corridor	N/A	Closed	N/A	N/A
Sheep Mountain	11,534	Vacant	0	N/A
Stoner	3,317	3-Pasture Rotation	160	6/15 – 10/10
Taylor Mesa	10,449	10-Pasture Rotation	533	6/10 – 10/10
Tenderfoot	27,340	4-Pasture Rotation	416	6/20 – 10/15
Trail	8,726	Vacant	0	N/A
Twin Springs	10,567	4-Pasture Rotation	105	6/26 – 10/30
Willow Divide	7,148	5-Pasture Rotation	284	6/10 – 10/15

The analysis area also includes small portions of the Gold Run, Groundhog, Haycamp, and Turkey Creek Allotments.

Active Allotments would be affected the most from travel management decisions. Inactive allotments are less affected.

A sufficient road system facilitates livestock management practices by giving grazing permittees access to their allotments. This is necessary in order to transport livestock; haul fence material, salt, or mineral supplements; and maintain range improvements such as fences and reservoirs. If roads are not available then permittees usually have to travel cross-country or use horses. Annual Operating Instructions can be used to authorize the use of closed routes. Because heavy equipment for

constructing or cleaning reservoirs can be “walked” into an area from a nearby open road, there needn’t be a system road to every reservoir.

Most cattle are brought onto allotments each year by trailer on main roads. Several permittees herd their livestock up and down Forest roads and trails. This practice can change over time, depending on what works best for the permittee’s operation.

Successful range management involves keeping cattle in certain pastures at certain times. Many Forest roads have cattle guards that prevent cattle from leaving an allotment yet accommodate vehicle traffic. However, some fences contain wire gates that cross Forest roads and are sometimes left open by drivers. In the RWD area, some pastures are bounded by dense vegetation that can serve as a fence, but new pathways through dense woods can result in unwanted livestock movement between pastures. An overabundance of roads and trails adds to the cost of keeping cattle in their appropriate pastures, including the personnel, travel time, and fuel required to move them.

3.11.1.2 Weeds

An *invasive species* is a plant (or animal) that is not native to a specific location (i.e., was introduced) and has a tendency to spread. Such a plant damages the environment, human economy, and/or human health. A *noxious weed* is a weed that has been designated by an agricultural authority as one that is injurious to agricultural or horticultural crops, natural habitats or ecosystems, or humans or livestock.

Noxious weeds are designated by each state in the United States. A weed may be designated noxious in one state but not in another. In Colorado, each species is placed on a status list and is managed accordingly:

List A species designated for eradication.

List B species are those for which state noxious weed management plans are developed and implemented to stop their continued spread.

List C species are those for which state noxious weed management plans are designed to support the efforts of local governing bodies to facilitate more effective integrated weed management on private and public lands. The goal of such plans will not be to stop the continued spread of these species but to provide additional education, research, and biological control resources to jurisdictions that choose to require management of these species.

Watch List species have been determined to pose a potential threat to the agricultural productivity and environmental values of the lands.

Weed treatment is often limited, depending on time and funding constraints; therefore, identifying priority species for treatment is necessary. Species considered a “high priority for treatment” are generally low in abundance, feasible to control, able to establish dominance in plant communities, or tend to invade a variety of relatively healthy ecosystems. The species shown in Table 3-31 are considered a high priority for treatment on the Dolores District:

Table 3-31 Weed Species that are a High Priority for Treatment

SPECIES	ACRES	STATUS
Russian knapweed (<i>Acroptilon repens</i>)	138	List B
-Spotted knapweed (<i>Centaurea maculosa</i>)	267	List B
Diffuse knapweed (<i>Centaurea diffusa</i>)	5	List B
Hoary cress (<i>Cardaria draba</i>)	9	List B
Houndstongue (<i>Cynoglossum officinate</i>)	41	List B
Leafy spurge (<i>Euphorbia esula</i>)	8.5	List B
Dalmatian toadflax (<i>Linaria dalmatica</i>)	6	List B
Yellow toadflax (<i>Linaria vulgaris</i>)	8	List B
Sulfur cinquefoil (<i>Potentilla recta</i>)	2	List B
Oxeye daisy (<i>Chrysanthemum leucanthemum</i>)	126	List B
Perennial Pepperweed/White Top (<i>Lepidium latifolium</i>)	14	List B
Musk thistle (<i>Carduus nutans</i>)	16,481	List B
Bull thistle (<i>Cirsium vulgare</i>)	29	List B
Scotch thistle (<i>Onopordum acanthium</i>)	1	List B
Canada thistle (<i>Cirsium arvense</i>)	6,498	List B

Infestations known to occur within the RWD analysis area are listed in the Table below:

Table 3-32 Weed Infestations in the RWD analysis area

Noxious Weed	Acres within Project Area
Russian knapweed	.019
Perennial pepperweed/white top	.12
Musk thistle	1,502.0
Spotted knapweed	.002
Diffuse knapweed	.001
Canada thistle	2,399.0
Bull thistle	14.0
Leafy spurge	.24
Houndstongue	1.4
Oxeye daisy	95.0

The table below identifies invasive species that pose a potential threat to SJNF lands, given their close proximity.

As part of the SJNF weed management program, early detection rapid response methods will be used in the event that a potential invader is found on public lands. These methods include: 1) systematic inventories, 2) recurring monitoring, 3) timely treatment, and 4) notification of Forest Service staff, partners, and cooperators.

Invasive Species	Status	Comments (last updated in 2012)
Dyer's woad (<i>Isatis tinctoria</i>)	List A	1 mile west of Dove Creek, Colorado, along Hwy. 491 (1 acre infestation)
Camelthorn (<i>Alhagi pseudalhagi</i>)	List A	Southeast San Juan County, Utah, in the Montezuma Creek vicinity
Yellow starthistle (<i>Centaurea solstitialis</i>)	List A	Mesa and Montrose Counties, Colorado, and along Hwy. 140 about 5 miles south of the New Mexico state line
African rue (<i>Peganum harmala</i> L.)	List A	Farmington, New Mexico, area
Squarrose knapweed (<i>Centaurea virgate</i>)	List A	Utah
Orange hawkweed (<i>Hieracium aurantiacum</i>)	List A	Northeast Colorado
Purple loosestrife (<i>Lythrum salicaria</i>)	List A	Along the San Miguel River, San Miguel County, Colorado
Medusahead rye (<i>Taeniatherum caput-medusae</i>)	List A	Nevada and Utah
Mediterranean sage (<i>Salvia aethiopsis</i>)	List A	Along County Road 29 in Montezuma County, Colorado. Possibly on private land in the Animas Valley.
Bouncingbet (<i>Saponaria officinalis</i>)	List B	On private lands in Archuleta County, Colorado, and County Road 250 East Animas Road
Giant salvinia (<i>Salvinia molesta</i>)	List A	Capable of spreading long distances through water and water-related activities.
Hydrilla (<i>Hydrilla verticillata</i>)	List A	Capable of spreading long distances through water and water-related activities.
Eurasian watermilfoil (<i>Myriophyllum spicatum</i>)	List B	In Colorado. Capable of spreading long distances through water and water-related activities.

3.11.2 Effects of the Alternatives

3.11.2.1 Forage Production

Estimates of forage loss from the physical presence of roads and trails by Alternative is located in the project file. Acres of disturbance associated with roads and trails by vegetation type were described previously in the Rare Plan section of this DEIS. Forage effects are very minor.

3.11.2.2 Range Management

3.11.2.2.1 Background

As mentioned above, motorized travel can impact range resources and uses in different ways. These impacts tends to be tangible (referred to as "physical impacts") or not so tangible (referred to as "disturbance"). Physical impacts occur when the ground is disturbed through road and trail development that removes vegetation and, consequently, livestock forage. Such development also can cause erosion or the spread and establishment of invasive species. Disturbance occurs when noise and

associated encounters with motorized vehicles disrupt herding and livestock management operations. It can be the result of mixed use on the same trail (planned or unplanned). Disturbance to livestock operations can also result when recreationists fail to close gates between pastures and allotments.

Physical Impacts: Ground disturbance associated with the construction or decommissioning of roads (a short-term impact) is an example of an activity that has a direct effect on vegetation. Ground disturbance can cause soil erosion and compaction, water channeling, and other impacts to soil and water through the loss of vegetation. A loss of vegetation can mean a loss in available livestock forage in the short term. Long term physical impacts occur when areas are designated for long-term use as a road or trail. This creates linear bare ground features that result in a long-term reduction in forage availability

Another physical impact is the condition of roads and trails. Motorcycle use tends to create trails that are deep and narrow (the width of a motorcycle tire). Because trenched trails are not pleasant or safe for horse and foot travel, side trails often form or cross-country travel occurs.

Calculating road and trail mileage is one way to quantify the risk of weed introductions, since motor vehicles are vectors of seed dispersal. Impacts from ground disturbance by calculating the total acres affected by alternative.

Disturbance: Livestock herding can be highly effective for keeping cattle from using areas of concern. It can also encourage cattle to graze pockets of forage away from water or places where litter accumulations are high. In other words, herding can spread the distribution of livestock and lessen impacts to resources from grazing. Unfortunately, the use of motorized vehicles can disrupt herding efforts by livestock operators. Operators often spend hours gathering livestock from side canyons and dense brush in order to move them somewhere preferable. One encounter with a motor vehicle can scatter the herd and render their efforts worthless.

Conflicts between permittees and motorized vehicle drivers have occurred on South Calico, Priest Gulch, East and West Twin Springs, and Stoner Mesa Trails (allotment notes in project file). Changes to these trails, however, are not planned as a result of this analysis.

Pathways created by livestock can add confusion about which trails are available for public use. As livestock are herded between pastures and specific locations within pastures, cattle leave distinct trails on some of the allotments within the analysis area. These trails can be mistaken for recreation trails, leading people off of designated routes.

Roads and trails, particularly those between pastures or allotments, can hinder the ability of allotment managers to keep livestock in desired pastures. Obvious problems arise when gates are left open and livestock move into undesired locations. The Alternative with the greatest number of roads and trails would likely require the most cattle guards in order to avoid such situations.

For the RWD area, some pasture breaks depend on forest vegetation to act as a barrier between pastures. In these locations fences are not used. Newly created recreation trails could provide a pathway and result in unwanted movement of livestock between the pastures.

Livestock operators and backcountry horsemen typically pull long rigs and need adequate space in which to turn a truck and horse trailer around. However, some existing dead-end roads have been constructed without regard for this reality.

Nonmotorized trails also cross allotments in the RWD area. Physical impacts from nonmotorized trails are similar motorized trails except that 'cupped' trenches are less evident. Disturbance to livestock herding can and does also occur when nonmotorized recreationists encounter livestock. Encounters seem to cause less disturbance than a motor vehicle but there is still an effect. There are approximately 141 miles of nonmotorized trails currently in the RWD area.

Alternative A

Several trails were not included in this analysis because their use does not change from Alternative to Alternative. The paragraphs below focus on active allotments.

This Alternative also has the greatest potential for livestock/motor vehicle encounters, given that it involves a total of 326 miles of motorized roads and trails. These encounters could occur any time livestock and recreationists are in the project area, as there are/would be no timing restrictions for motorized travel. This means Alternative A would require more gates and cattle guards than any other Alternative would.

Specific disturbance issues associated with motorized travel and livestock differ among the various Alternatives. Disturbance to range management exist where this Alternative authorizes motorcycle use on Burnett Creek, Spring Creek, and Wildcat Trails. It benefits livestock operations by not authorizing motorcycle use on Loading Pen Trail.

The risk of weed spread and establishment would be greatest under this Alternative, given 331 miles of motorized roads/trails and 882 acres of disturbance.

Alternative B

This Alternative also has a moderate potential for livestock/motor vehicle encounters, given 297 miles of motorized roads and trails. These encounters would most likely occur between July 1 and September 8, since this Alternative would have timing restrictions for motorized travel that are more restrictive than the timing restrictions in the other action Alternatives. Alternative B would require more gates and cattle guards than Alternatives E would, the same number as Alternative D, but fewer than Alternatives A and C would require.

Specific disturbance issues associated with motorized travel and livestock differ among the various Alternatives. Problems exist where Alternative B authorizes motorcycle use on Spring Creek Trail. This Alternative benefits livestock operations, however, by not authorizing motorized travel on Burnett Creek, Wildcat, Loading Pen, Tenderfoot, or Galloping Goose Trails.

The risk of weed spread and establishment would be moderate under this Alternative, given 302 miles of motorized roads/trails and 839 acres of disturbance.

Alternative C

This Alternative would also have a high potential for livestock/motor vehicle encounters, given 318 miles of motorized roads and trails. These encounters would mostly likely occur between June 1 and October

30, since this Alternative's timing restrictions for motorized travel are relatively relaxed; they are the same as those under Alternatives D and E but not as strict as those under Alternative B. (Alternative A has no timing restrictions.) This means Alternative C would require more gates and cattle guards than Alternatives B, D, and E would, but fewer than Alternative A would.

Disturbance to livestock operations exist where this Alternative authorizes motorcycle use on Burnett, Spring Creek, Loading Pen, Tenderfoot, and Galloping Goose trails. It benefits livestock operations by not authorizing motorcycle use on Wildcat Trail.

The risk of weed spread and establishment would be moderate under this Alternative, given 325 miles of motorized roads/trails and 847 acres of disturbance.

Alternative D

Alternative D also has a moderate potential for livestock/motor vehicle encounters, given 301 miles of motorized roads and trails. These encounters would most likely occur between June 1 and October 30, since this Alternative has timing restrictions for motorized travel that are more lax than those under Alternatives A and B. This means that Alternative D would require more gates and cattle guards than Alternative E would, the same number as B, but fewer than Alternatives A and C would require.

Disturbance to livestock operations exist where this Alternative authorizes motorcycle use on Burnett, Spring Creek, Loading Pen, and Galloping Goose Trails. It benefits livestock operations by not authorizing motorcycle use on Wildcat or Tenderfoot Trails.

The risk of weed spread and establishment would be moderate under this Alternative, given 302 miles of motorized roads/trails and 839 acres of disturbance.

Alternative E

This Alternative also has the least potential for livestock/motor vehicle encounters, given 278 miles of motorized roads and trails. These encounters would most likely occur between June 1 and October 30, since this Alternative has timing restrictions for motorized travel that are less restrictive than those under Alternative B. This means Alternative E would require fewer gates and cattle guards than any other Alternative would require.

Disturbance to livestock operations exists where this Alternative authorizes motorcycle use on Burnett, Spring Creek, Loading Pen and Galloping Goose Trails. It benefits livestock operations by not authorizing motorcycle use on Wildcat or Tenderfoot Trails.

The risk of weed spread and establishment would be moderate under this Alternative, given 281 miles of motorized roads/trails and 833 acres of disturbance.

3.11.3 Cumulative Effects

Because none of the Alternatives would introduce many new roads and trails, none is expected to greatly increase the amount of ground disturbance and vegetation loss. Given the abundance of invasive species already on the Forest, minor adjustments in the number and use of roads and trails would likely not have a measurable effect on the need for noxious weed management.

Incidental illegal motorized use will occur, as it has in the past, when budgets supported more intensive trail management and law enforcement efforts. More recently, budgets have declined, and so have these efforts. At the same time, motorized use has increased. Therefore, parklands, old timber sale roads, and other open areas that crisscross designated motorized trails will likely receive some level of illegal use. This could result in more livestock/motor vehicle encounters and could create ground disturbance and a loss of forage where it is not planned.

Closing one area to motorized travel might simply increase motorized travel in another area, benefiting one permittee while negatively impacting another.

The table below summarizes affects to range management.

Table 3-33 Summary of Effects to Range and Weed Management

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Miles of Motorized Roads and Trails	326	297	318	301	278
Likely Timing of Motorcycle/ Livestock Encounters	Any time	7/1 - 9/8	6/1 - 10/30	6/1 - 10/30	6/1 - 10/30
Source and Location of Negative Impacts	From motorized use of Burnett Creek, Spring Creek, and Wildcat Trails	From motorized use of Spring Creek Trail	From motorized use of Burnett Creek, Spring Creek, Loading Pen, Tenderfoot and Galloping Goose Trails	From motorized use of Burnett Creek, Spring Creek, Loading Pen, and Galloping Goose Trails	From motorized use of Burnett Creek, Loading Pen, and Galloping Goose Trails
Source and Location of Benefits	From no motorized use of Loading Pen, Tenderfoot, and Galloping Goose Trails	From no motorized use of Burnett Creek, Wildcat, Loading Pen, Tenderfoot, and Galloping Goose Trails	From no motorized use of Wildcat Trail	From no motorized use of Wildcat and Tenderfoot Trails	From no motorized use of Spring Creek, Wildcat, and Tenderfoot Trails

3.12 FOREST MANAGEMENT AND FOREST PRODUCTS

Access for forest management and collection of forest products is part of the purpose and need for this project. There were no major issues identified for this topic. Analysis is based on staff knowledge of forest products management as part of the timber program.

3.12.1 Affected Environment

Although large areas of the Rico-West Dolores (RWD) analysis area are presently semiprimitive or roadless, more than 50,000 acres are currently designated under the *Forest Plan* as suitable for active forest management and timber production. An additional 17,000 acres are located outside of the Colorado Roadless Areas, where timber harvesting may be done as a resource management tool for purposes other than timber production. Commercial-scale timber harvesting has been and continues to be an important part of the local economy. Timber management and harvesting is also an important tool for managing ecosystem diversity, forest insect and disease populations, tree growth and yields, recreation settings, wildlife habitat, and wildfire hazard mitigation.

As a reminder, ML1 roads are stored roads, ML2 roads are native surface and ML3 roads are gravel surface roads that receive annual maintenance. All three types of road are National Forest System Roads (NFSR).

3.12.2 Effects of the Alternatives

3.12.2.1 Commercial-Scale Forest Product Harvesting

Changes to the Forest road system can affect the ability to carry out these activities in an economically feasible and safe manner. The proposed changes most relevant to commercial-scale timber harvesting would be the elimination of existing system roads through either decommissioning or conversion to recreational trail uses. A few road segments are also proposed for either upgrades or downgrades from their current maintenance level (ML) status.

These proposed changes are common to all four action Alternatives and should have very little negative effect on the ability of the forest products industry to conduct timber harvesting activities in the future. Only minor changes are proposed for the arterial road system, which would continue to serve as the primary timber-hauling routes. Although a significant number of ML1 roads would be removed from the system under all four action Alternatives, this would not necessarily rule out their potential use as access routes in the future. Most commercial-scale timber sale contracts allow the contractor to construct low-grade temporary roads or to use existing unauthorized routes to access harvesting areas if the designated official road system does not meet those needs.

Relying on temporary roads, rather than ML1 stored roads, could have a negative impact on the ability to carry out certain types of salvage sales, fuels mitigation treatments, or insect/disease mitigation treatments. Using official system roads to access treatment areas does not count as new ground disturbance. Using temporary roads to access those same potential areas in the future might require a more expensive and time-consuming environmental review process. Similarly, the simplest form of timber sale contract that the Forest Service is currently authorized to use does not contain provisions authorizing a purchaser to construct temporary roads. If future harvest areas can be accessed only via

temporary road construction, more complex and time-consuming contract forms will have to be prepared, making small timber sales less feasible to prepare and offer.

The alignment of additional recreational trails directly on top of existing maintenance ML1 roads (as proposed in some of the action Alternatives) could potentially affect commercial-scale timber harvesting adversely. This overlapping alignment could increase the likelihood of conflict between route users and could compromise use of the underlying ML1 road for management purposes. As the recreating public uses a route over a period of years, the perception builds among those users that the route is meant exclusively for recreation purposes. Therefore, if a future administrative or management project reopens the stored ML1 road to fully operational status, there will likely be some public outcry among those who have come to think of the route as a recreation trail and not as an inactive system road. Similarly, if current roads are removed from the system and converted to recreational trail status, the disturbance of those recreation trails for temporary project access will likely invite controversy and conflict in the future.

3.12.2.2 Personal-Use and Small-Scale Forest Product Harvesting

Many members of Montezuma and Dolores Counties, neighboring communities, and members of the Navajo Nation and Ute Mountain Ute Tribe all rely on wood-burning stoves and/or fireplaces to heat their homes entirely or to supplement other heat sources. The SJNF and RWD planning area are important sources of this fuelwood. These same communities also use the RWD area heavily for gathering special forest products, including mushrooms, teepee poles, fencing material, Christmas trees and boughs, seeds, pine cones, and certain kinds of roots. Most all of this personal use, traditional gathering, and small-scale commercial harvesting is essentially “roadside” or close to system roads. Normally, the permits issued to customers authorize these activities but prohibit motor vehicles from going more than 300 feet from an open road (ML2 or higher).

Proposed changes to the ML1 road system discussed above would have no effect on the ability of these users to gather forest products. ML1 roads are typically maintained in an inactive/storage status, so they are not generally available to permitted gatherers or woodcutters anyway. However, the removal of ML1 roads from the official system could have some negative impact on forest product harvesting. By keeping such roads on the official system, the Forest Service could temporarily open them to the public as permitted firewood cutting areas. If, however, such ML1 roads were decommissioned, it would not be appropriate to encourage motor vehicle use on those old roadbeds.

The proposed changes to the 62-inch trail system could increase forest product gathering. All of the action Alternatives would allow the use of 62-inch-wide UTVs on the existing Willow Divide Trail, and they would also add several additional miles of 62-inch-wide trail to the system. UTVs are significantly larger and more powerful than the smaller ATVs that are currently permitted on the OHV trails. The use of these larger machines should provide some additional ability to gather special forest products in these remote areas. Alternative A (No Action) would not provide access for 62-inch UTVs. Alternatives B, D, and E would provide approximately 15 miles of UTV access, while Alternative C would provide almost 22 miles of UTV trails.

3.12.3 Cumulative Effects

Access for timber management and personal use, wood product gathering would be provided under all Alternatives. Except for the upcoming Taylor and Stoner Mesas Vegetation Management Project, no past, present, or foreseeable projects would affect designation of the Forest road system.

3.13 RECREATION

The following sections describe recreation opportunities, and how those opportunities differ across the Alternatives. This analysis is drawn primarily from staffs experience including field observation that occurred frequently as part of the recreation management program.

Quality of the recreation experience is discussed in terms of loops, destinations, natural forest settings, and connections. A discussion of recreation settings and experiences is described along with impacts to nonmotorized recreation from motor vehicle designations. The socio-economic section that follows addresses values, beliefs and attitudes.

One question addressed here is whether or not any of the Alternatives would cause individuals to abandon the Rico West Dolores area as a recreation destination. If the number visitors decreases, then that decrease could translate into an economic effect. Economic information is not available by type of use, but can be estimated for local visitor use (within 50 miles of the RWD area) or nonlocal visitor use (persons traveling from farther than 50-miles). Therefore estimated changes in visitation are described here followed by the socio-economic section later in this chapter.

3.13.1 ATV and UTV Riding Opportunities and Recreation Experience

3.13.1.1 Affected Environment

In the RWD area, recreational use of ATVs and UTVs occurs primarily on the 205 miles of Forest roads (and, for ATVs, on the 7 miles of 50-inch OHV trail). Currently designated ATV trails are designed to accommodate 50-inch-wide ATVs (ridden by a single person) – not the wider UTVs that provide side-by-side seating for two to four people. For this reason, UTV riding is allowed on Forest roads but not on trails.

Most riding in summer is associated with dispersed camping. Groups of families or friends camp and ride the surrounding roads and trails. Many local residents travel to the mountains to escape the heat at lower elevations, and camp along Forest roads. Others stay at the Groundhog Lake RV Park and Campground on nearby private land, bringing their ATVs or UTVs and riding from their campsites during the day. To a lesser extent, local residents also haul their ATVs or UTVs on trailers or in the back of pickup trucks into the RWD area, where they offload and ride them. Per field observations and interactions with area users, staff report that most ATV or UTV riders are local and stay overnight. A smaller percentage of users are nonlocal users who come to the area in the summertime from New Mexico, Utah, Texas, or Arizona.

Fall ATV/UTV riding is primarily associated with hunting. Hunters typically set up dispersed campsites off of Forest roads and ride ATVs or UTVs from these sites; stay in area hotels or cabins and trailer their ATVs or UTVs to the Forest; or haul by truck or trailer from local residences for daily riding.

ATV/UTV riders enjoy the natural settings across the RWD landscape, in which they pass through spruce-fir and aspen forests and meadows and alongside ponds and streams to reach viewpoints with long-distance vistas. Although riding the Forest roads and trails is popular in the RWD area, it is not an ATV/UTV destination like the Alpine Loop Trail that winds around Silverton, Colorado.

3.13.1.2 Effects of the Alternatives

Excluding ML1 roads, the open road system would experience minor changes under Alternatives B, C, D, and E. The distribution of roads, as well as recreation access, would be similar to the current system. All the action Alternatives would experience a minor increase trail riding opportunities compared to Alternative A.

Under Alternative A, 7-miles of trail are designated (Willow Divide OHV Trail). Alternatives B, D, and E include three new loop trails (Groundhog, Lone Cone, and Taylor), for a total of 15 miles and Alternative C includes 5 additional miles on Black Mesa for a total of 20 miles. OHV trails connect to Forest System roads to creating riding loops.

Increasing trail widths to 62 inches would increase the number of vehicles using the trails and might increase the use of unauthorized routes; however, additional loop opportunities provide a better and longer experience for riders and might discourage new unauthorized routes.

The road system would keep most of its current configuration.

Some popular areas are closed to ATV or UTV riding (Groundhog Point, Fish Creek and Willow Creek areas). This may cause people to feel displaced. Alternate riding options exist on the other roads and trails in the vicinity of these locations. Social effects could reduce over time as riders would become accustomed to the new policy and as confusion about old policies abates.

Timing restrictions apply only to 62-inch trails. The trails affected by spring timing restrictions include Willow Divide OHV Trail, the proposed Groundhog OHV Trail, the proposed Lone Cone OHV Trail, the proposed Black Mesa OHV loops, and the proposed Taylor OHV loop. Springtime riding on these Trails would begin on July 1 under Alternative B and on June 1 under Alternatives C, D, and E. Only the Black Mesa OHV loops under Alternative C would have a fall timing restriction, which would not allow riding after September 30. Because the proposed timing restrictions would not affect roads, and because 62-inch OHV trails would comprise a small portion of the Forest road and trail system, timing restrictions are not expected to greatly impact riding opportunities.

Because many of the same areas would be accessible for summertime riding and fall hunting, both local and nonlocal visitation would be expected to remain constant across the five Alternatives. None of the proposed changes (including timing restrictions) are expected to cause riders to abandon the RWD area.

Use is expected to increase due to population growth in nearby communities, especially the private lands around Groundhog Reservoir. The northwest corner of the RWD area is popular today, and upward trends are expected.

3.13.1.3 Specific Impacts to ATV/UTV Riding Opportunities, by Subarea

3.13.1.3.1 Subarea 1 Lone Cone, Groundhog Point, Fish Creek and Willow Divide

ATV/UTV riding would be allowed on the road system and on new 62-inch trails proposed for Subarea 1. Such riding would be prohibited in wet meadows and riparian areas at the headwaters of Fish Creek and Willow Creek. Adjustments to the road system near Lone Cone would help ensure that road reconstruction and maintenance address road damage and improve riding experience. Changing two ML1 roads (FR534F and FR534E2) to open ML2 roads would add spur roads for camping and viewpoint access. The areas beyond the current gates at Groundhog Point and the ditches would be nonmotorized for wildlife habitat benefits and walk-in hunting.

Unfortunately, visitors today must navigate a rough road in order to access the current Fish Creek Trailhead. Its current location also provides access to unauthorized roads associated with past timber activity. Moving the Trailhead north to a new terminus on FR404 would likely reduce access to these unauthorized routes. Hunters and anglers traveling by foot would continue to have access to the Fish Creek watershed but would have fewer conflicts with motorized users.

Alternative C would expand summer ATV/UTV riding opportunities by providing loop-riding opportunities off of FR611A and designating trails along old (unauthorized) logging routes on the Mesa. Most trails would avoid wet areas and steep slopes on either side of the Mesa. At the same time, Alternative C would accommodate walk-in hunters by establishing a fall timing restriction on ATV/UTV riding. Only NFSR611A would be open in the fall. Designating loop-riding opportunities on Black Mesa could reduce riding pressure at the headwaters of Fish Creek, while the unauthorized use of ATVs/UTVs could also decline through signage and route decommissioning.

3.13.1.3.2 Subarea 2 - Winter Trail, East Fall and Est Fall Creek Trails and NFSR471

No specific changes are proposed in Subarea 2.

3.13.1.3.3 Subarea 3 – Taylor Mesa, Stoner Mesa, East and West Twin Springs

Under Alternatives B, C, D and E the current designations and locations for NFSR248, NFSR545, NFSR547, and spur roads off of NFSR547 (NFSR547B, 555, 864) would remain the same across all the Alternatives, so riding opportunities would not change. Placing the terminus of FR201 at the intersection with Loading Pen Trail would discourage cross-country travel on stored roads or old pathways. Areas beyond the terminus of FR201 would be nonmotorized, enhancing wildlife security, walk-in hunting, and wetland protection.

Decommissioning NFSR547 to a new terminus on the south side of Spring Creek will have limited impacts on dispersed campers, since only one small campsite is used in the section that's proposed for decommissioning.

The proposed 3-mile loop on Taylor Mesa using stored ML1 roads would provide a new opportunity for people who typically ride roads on Taylor Mesa.

3.13.1.3.4 Subarea 4 Priest Gulch, South Calico, Tenderfoot and Wildcat

No specific changes are proposed in subarea 4

3.13.1.3.5 Subarea 5 North Calico, Johnny Bull, Eagle Peak

No specific changes are proposed in subarea 5

3.13.1.3.6 Subarea 6 – Burnett, Horse Creek, and the Town of Rico

No specific changes are proposed in subarea 6

3.13.1.3.7 Subarea 7 Barlow Road and East Fork Area

Alternative A would maintain ATV and UTV access into the Tin Can Basin area via NFSR578B and NFSR578B1, which provide hunter access. Alternative B would convert roads to single-track trails and would remove access by ATV or UTV. This could negatively affect hunters who are accustomed to using these roads.

Maintaining current designations for FR149 and FR496 but decommissioning a portion of these roads would continue to allow dispersed camping at two sites. OHV (ATV/UTV) opportunities on these and nearby roads would be maintained.

3.13.1.3.8 Subarea 8 Ryman, Lower Ryman, Scotch Creek and NFSR564

No specific changes in subarea 8

3.13.1.3.9 Subarea 9

Riding and camping opportunities on FR208 would be reduced under all Alternatives because approximately half of that road would be decommissioned. ATV and UTV riding and dispersed camping would be maintained on FR358 even if the last quarter-mile were to be decommissioned.

3.13.1.4 Cumulative Effects

The interdisciplinary team (ID Team) considered cumulative effects that could extend to the Animas River corridor north of Durango, CO (to the east) and all the lands of the Dolores District. OHV riding and dispersed camping opportunities abound within this cumulative effects area. The Dolores District has an extensive system of ML2 roads that provide for ATV and UTV riding, including Alpine Loop Trail and Boggy Draw OHV Trail. To the east, the Hermosa landscape provides fewer miles, but arterial Forest roads connect to the RWD landscape. (See the regional motorcycle riding opportunities section below for OHV trail mileages on the SJNF from past to present.)

Nonmotorized recreation use of Forest roads and OHV (ATV/UTV) trails does not limit access to, or enjoyment of, OHV riding in the RWD area.

ATV and UTV riding opportunities exist on nearby private lands in the Groundhog Reservoir area, where the store and private campground at Groundhog Reservoir serve many riders. Although each Alternative provides a system of roads on adjacent Forest Service land, Alternative C provides the most miles in proximity to the Groundhog area.

Alternatives B, D, and E would provide more miles than Alternative A, but fewer miles than Alternative C. None of the RWD Alternatives would substantially reduce riding opportunities on the Dolores District.

3.13.2 Motorcycle Riding Opportunities and Experience

3.13.2.1 Affected Environment

3.13.2.1.1 Regional Opportunities

As a general rule, the San Juan National Forest and especially the Dolores District has many more roads and 50-inch trails than single-track trails. Because of the road system, riding opportunities for ATVs and UTVs abound, while single track opportunities are comparatively few and far between.

Below is a discussion of changes in OHV trail opportunities on the San Juan National Forest from 2005 through 2015. Table below reflects the number of motorized trails on the SJNF as of 2005¹⁸. The second column depicts mileages from 2015¹⁹.

Table 3-34 Motorized Trail Miles per District 2005-2015

Ranger District	2005	2015
Columbine	51.1	145.0
Dolores	150.5	206.9
Pagosa	47.0	91.2
Total	248.7	443.0

The results of this exercise reflect an upward trend in trail miles that have been officially designated for motor vehicle use.

It is important to note, however, that unmapped routes existed areas with that previously had no restrictions on motor vehicle travel Off Of Forest Development Roads. So, although the overall number of miles has trended upward for *mapped* trails, this increase is offset by the reduction in “unofficial,” unmapped routes that occurred when the Forest moved to a designated road and trail system.

3.13.2.1.2 Motorcycle Opportunities in the RWD Area

Motorcycle riders travel to the RWD area from nearby counties and the local communities of Cortez, Dolores, Dove Creek, Rico, and Telluride. Motorcyclists also come from Durango, not quite 50 miles

¹⁸ These mileages were created by digitizing the mileages from the (2005) San Juan National Forest Visitor Map consistent with the “A,” “B,” and “F” designations. (Trails in “A” and “B” areas were open to motorized use on designated routes only while “F” areas were open to motor vehicle use anywhere within the area as long as resource damage did not occur.) The 2005 Visitor Map did not distinguish between ATV and single-track trails so mileages include both 50-inch and single-track trails.

¹⁹ The mileages in the 2015 column were computed by digitizing the trails shown on the District’s (2015) Motor Vehicle Use Map (MVUM). All trails that were shown on the MVUM as being open to motor vehicles (OHVs or motorcycles) were counted; however, trail *segments* overlying ML2, ML3, or ML4 roads – such as portions of the Aspen Loop, Willow Divide OHV Trail, and Boggy Draw OHV Trail – were not counted.

from the RWD area. They sometimes get onto National Forest trails on the Columbine District (east of the Dolores District), cross over the spine of the La Plata Mountains, and enter the RWD area using designated routes from Hermosa Creek to Bolam Pass. Local riders also haul their motorcycles in trailers or pickup trucks, which they park at trailheads. The most popular trailheads are at the northern terminus of Calico NRT (off of FR535); Stoner Creek off of Cty Rd 38 (West Dolores Road); and Bear Creek (off of Highway (Hwy.) 145).

Forest Service employees have observed local riders alone, in small groups of two or three, or in much larger groups. Riding is common from June through September (personal conversation C.Bouton 2015). Local riders usually take day-trips of 50 miles and sometimes longer trips of up to 70 miles in one day. Many have favorite loop rides that traverse in and out of the RWD area (personal conversation San Juan Trail Riders 2015).

Nonlocal motorcycle riders travel to the RWD area from places like the “Front Range” (e.g., Denver and Colorado Springs), Flagstaff or Phoenix, Arizona, and even from California (personal observations of District staff). In scoping comments, nonlocal riders have stated they stay in motels in Rico. They have also been observed at local hotels in Dolores.

Nonlocal motorcycle riders are usually looking for a multiday experience. The RWD area currently provides two to three days of riding, depending on the routes chosen. In this amount of time, riders don’t have to cover the same ground twice. Beyond the RWD area, connections exist to the Mancos-Cortez landscape to the south, to the Hermosa landscape to the east, and to Telluride area trails to the north²⁰. Taking these connecting trails into consideration, the RWD and surrounding areas provide a week’s worth of daily riding.

Riding experience is an important factor for both the local and nonlocal rider. The RWD analysis area provides ‘single-track’ trail riding through mountainous forest settings. Trails traverse through aspen and spruce/fir forests, near forest ponds and streams, and along ridgelines with expansive views of mountain ranges. Many trails cross Colorado Roadless Areas with few roads or other developments. These tracts of land are very distant from the sights and sounds of urban areas and provide a sense of remoteness.

Trails include all the challenge and enjoyment that is found with riding a forest trail. In scoping comments, motorcycle riders stated that riding on a road is not as enjoyable as riding on trails. On the other hand, some nonlocal riders indicated that they come to the area to ride Forest Service roads rather than the technical trails.

Any reduction of District-wide trails could be offset by future trails in the Boggy-Glade landscape.

3.13.2.2 Effects of the Alternatives

3.13.2.2.1 Day or Multiday Rides and Trail Experience

Alternatives A, B, and C would provide loops, connections, scenery, and varied and scenic trail experience for motorcycle riding across the RWD area. Although some trails would not be available for riding under Alternatives B and C, as they would be under Alternative A, loops and connections would

²⁰ At this time, no motorcycle trail riding opportunities exist to the west, in the Boggy-Glade area.

still exist for a day ride and for multiday rides. Scenery, including ridgeline vistas, would be provided under Alternatives A, B, and C.

Alternative D would maintain trail miles and loops for day and multiday trips to a lesser degree than would Alternatives A, B, and C, but to a greater degree than Alternative E would. Alternative D would remove motorcycle riding in the Bear Creek drainage (on Bear Creek, Gold Run, Grindstone, and Little Bear Trails), while opportunities in the rest of the RWD landscape (for day rides, loops, and connections) would be the same as those under Alternative C. Bear Creek Trail parallels Bear Creek, a perennial and very scenic waterway. Enjoyment of this particular drainage would not be available to motorcycle riders under Alternative D; however, other trails would provide many high-elevation forest settings, including those along the Calico NRT and Bolam Pass.

Alternative E would offer the fewest trail miles and loops and would offer the fewest opportunities for day or multiday ride opportunities. The Bear Creek drainage, North Calico NRT, Johnny Bull Trail, and East Fork Trail would not be available for motorcycle riding. Alternative E would remove miles and loop connections to the extent where it would be difficult to make multiday trips without having to cover the same ground twice. Loop rides using Eagle Peak Trail, Stoner Mesa, Priest Gulch, and South Calico could be enjoyed. Although some ridgeline vistas could be seen from Eagle Peak Trail, Alternative E would result in a major reduction in scenic vistas because much of the Calico ridgeline would not be available for riding. With the loss of these vistas and multiday rides under Alternative E, nonlocal motorcycle use might decline significantly. It is difficult to guess how many, but some riders from Arizona, California, and the Front Range of Colorado and some nonlocal riders would probably stop coming to the RWD area.

3.13.2.2.2 Timing Restrictions

Alternative A would have no timing restrictions.

Alternative B would have the most impactful timing restrictions, since motorcycles would be allowed on trails only from July 1 to September 9. These timing restrictions could have a negative impact on motorized users if the recent string of mild winters continues, since less snow would otherwise allow earlier access to trails, including south Calico Trail and arterial trails like the ones in Priest Gulch, on Stoner Mesa, and in the Groundhog-Willow Divide area. Heavier winters are self-regulating in that deep snows, especially in the higher Calico Trail system or Lone Cone area, prevent motorized users from accessing the trail system. Damage from excessive soil moisture could still be possible after a July 1 opening in upper elevations, whereas lower trails could already be dry due to aspect and elevation differences.

Under Alternative B, motorcycle clubs that partner with the Forest Service, would have less time to clear fallen trees from trails and might not want to spend their shortened riding season doing this work. For this reason, a few local riders might stop recreating in the RWD area altogether. On the other hand, they could be authorized under a volunteer agreement to clear trails earlier than July 1, if conditions allowed. The September 8th fall closure could impede the enjoyment of typical fair weather, colorful aspen and dry riding conditions. The September 8th restriction could also impact hunters that use motorcycles on single track trails to access hunting areas.

Seasonal restrictions are not expected to affect nonlocal motorcycle riding opportunities because most riders from Arizona, California, or the Front Range of Colorado travel to the RWD area after July 1 (personal conversation C.Bouton 2015). Fall riding however, is diminished especially during fall colors.

Alternative C would provide a longer riding season than *Alternative B* would. Trails would be open to motorcycle riding from June 1 to October 30. This would allow trail-clearing activities to begin earlier. *Alternative C* would allow motorcyclists to enjoy autumn colors in September and October. However, riding in November would be restricted under this *Alternative*, eliminating opportunities for hunters to use motorcycles for hunting access on single-track routes. November riding is often eliminated due to snowfalls.

Alternatives D and E would be the same as *Alternative C*.

3.13.2.2.3 Motorcycle Regional Connections

The area analyzed for regional motorcycle riding connections is from the Animas River drainage (north of Durango) to the western edge of the Dolores District.

Connections are described to four areas surrounding the RWD area. A map inset follows.

This section addresses compatibility of motor vehicle use with adjacent Federal lands. All adjacent federal lands are 1) closed to cross-country travel 2) provide a designated road and trail system for motor vehicle use (except for wilderness or proposed wilderness areas) and 3) are managed in accordance with the Forest Plan.

Connection from Haycamp Mesa to the RWD Area

There are no Forest Service roads through the Bear Creek drainage which is part of the Hermosa roadless area. Currently, the route that starts at Gold Run Trailhead and drops down to Bear Creek Trail provides the only connection from the Mancos-Cortez (Haycamp) area to the RWD area. (Morrison Trail, northwest of Gold Run Trail, is not currently designated for motorcycle use and was eliminated from further consideration because the Forest Service does not have an easement to allow motorized use on the portion of the Trail that crosses private land.)

Alternatives B and C would retain this connection via Gold Run, Bear Creek, and Grindstone Trails. Riders who begin north of Mancos would have a variety of road and trail choices in the Mancos-Cortez landscape that lead to Gold Run Trail. Residents of Dolores could ride on Hwy. 184 to the Mancos/Cortez area, ride those roads and trails to Gold Run then travel down Bear Creek Trail back to Hwy. 145 and Dolores.

Alternatives D and E do not provide a motorcycle trail riding connection from Haycamp Mesa to the RWD area because Gold Run, Bear Creek, Grindstone, and Little Bear trails would be nonmotorized uses only. Ample riding opportunities would still exist in the two areas riders could 1) choose a day's ride in the Mancos/Cortez area or 2) choose a day's ride in the Rico West Dolores area with connections to the Hermosa landscape to the east 3) ride licensed motorcycles on Highway 145 to go from Mancos/Cortez to the RWD area in the same day.

Riders most affected by a severed connection between Haycamp Mesa and the RWD area trails are those who begin their day near Mancos or Dolores. As discussed below, a lost connection between

Haycamp Mesa and the RWD area has less effect on riders who begin their day in Durango, Telluride, or Rico.

Connections between Hermosa Landscape and the RWD Area

The Hermosa landscape on the Columbine Ranger District connects to the RWD area along the spine of the La Plata Mountains. Hermosa Creek Watershed Protection legislation was signed in December, 2014, as a part of the *National Defense Authorization Act of 2015*. The legislation specifies types of activities allowed and not allowed within the SMA and requires the Forest Service to complete a management plan for the approximately 70,000 acre SMA within three years. The management plan will serve as official guidance for the long-term protection and management of the SMA. The legislation also designated the new Hermosa Creek Wilderness area, however the new Wilderness Area is not immediately adjacent to or affected by roads and trails in the RWD area.

The Hermosa SMA includes roads and trails that allow motor vehicle use including trails that allow motorcycles. The Hermosa area is the connection for riders traveling from the Town of Durango.

Connections from the Hermosa Landscape would be maintained under all Alternatives. Motorcycle riders who start their day in Durango could travel Hermosa Creek Trail to Corral Draw Trail. Under all Alternatives the Corral Draw trail would be adjusted to provide a connection. Another option would be to ride on Hermosa Creek Trail to FR578 and the Bolam Pass area, and then take East Fork Trail.

Connections from Telluride, Ophir, Rico, and Hwy. 145

Currently, riders who begin their day near Telluride or the community of Ophir ride on Hwy. 145 to FR535 then to the North Calico Trailhead; take Hwy. 145 to East Fork Trail; or travel on Hwy. 145 south to Horse Creek or Burnett Trails.

Alternative B would maintain North Calico Trailhead and East Fork Trail. However, it would eliminate connections from Hwy. 145 at Horse Creek and Burnett Creek Trails. Motorcycle riders would have to continue south on Hwy. 145 to reach Priest Gulch Trailhead and trails on the west side of Hwy. 145, or they could use FR550 (Scotch Creek Road), on the east side of Hwy. 145.

Alternative C would include another connection at the Tenderfoot Trail.

Alternative D is the same as Alternative C.

Alternative E would eliminate the ability to connect to motorcycle trail riding opportunities via North Calico Trailhead. Under this Alternative, riders from Telluride, Ophir, or Rico would travel south on Hwy. 145 to the Montelores Bridge and connect to Burnett Trail, or would ride further south to Priest Gulch Trailhead or Forest roads on the east side of Hwy 145.

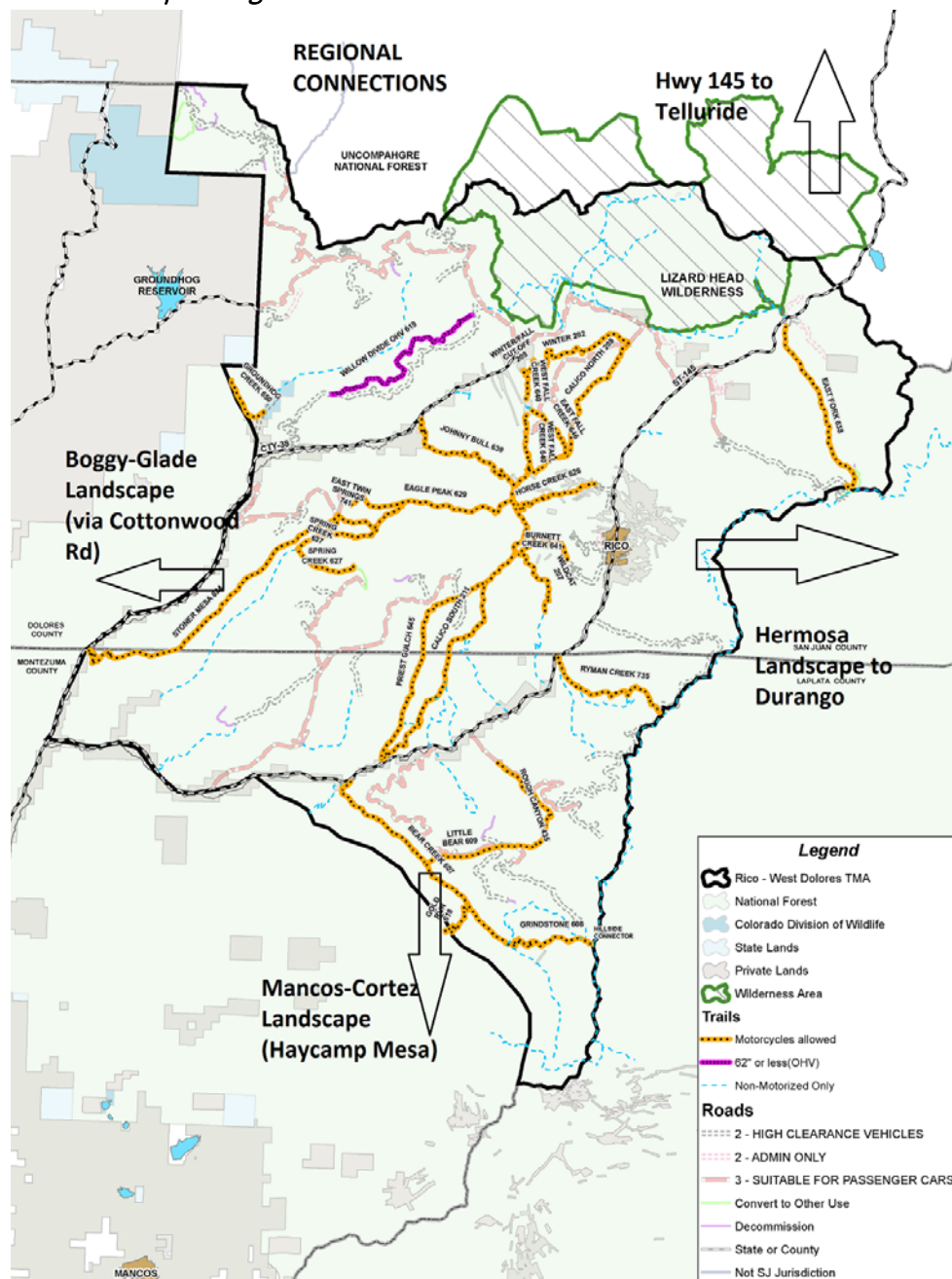
Connections from the Town of Dolores or the Boggy-Glade Landscape

Currently riders in Dolores may travel Hwy. 145 to County Rd 38 and the Stoner Mesa trail, or take Hwy. 145 to the Bear Creek or Priest Gulch trails.

All Alternatives maintain the Stoner Mesa and Priest Gulch trailhead connections. All the action Alternatives eliminate the lower 1/3 of Bear Creek from motorcycle riding and thus eliminate that connection from Hwy. 145.

No single track trail or OHV trail connections exist between the Boggy-Glade and RWD landscapes currently. Future NEPA analysis may be undertaken to address the need for single track motorcycle riding opportunities in the Boggy Glade area, and connections would be addressed at the time. FR532 (Cottonwood Rd) provides a road connection to County Road 38.

3.13.2.3 Map of Regional Connections



3.13.2.4 Summary of Effects of the Alternatives

Conclusion: Alternative A provides the most miles of trail but lacks the new connections provided under Alternative C. Alternative B provides the next highest number of miles but also lacks the new

connections. Alternative C would provide the best combination of miles, loops, connections, and recreation experience (with the exception of trail reductions in Bear Creek). This is because Alternative C would include trail developments on the Calico NRT; new connections from Burnett Creek Trail to Galloping Goose Trail; Spring Creek connections; and Bear Creek connections.) Except in the Bear Creek drainage, Alternative D would be similar to Alternative C in terms of loops, connections, and trail experience. Alternative E would offer the fewest number of miles, loops, and connections, and would remove most of the viewpoints and alpine riding experiences.

3.13.2.5 Cumulative Effects

Implementation of the Alternatives B, C, D or E would result in additional 62-inch trails but fewer miles of motorcycle trails. Combined with the estimated Forest totals, this would contribute to a static or downward trend in miles of OHV trails across the Forest. Through separate analysis in the future, additional trail miles could be added to the Forest trail system, increasing the Forest-wide totals. For example, the Boggy-Glade travel management decision identified the need for additional motorcycle trail-riding opportunities. Similarly, the Hermosa Creek Special Management Plan currently undergoing public scoping could ultimately adjust motor vehicle trail miles. (Because legislation for the new Hermosa Special Management Area emphasizes the continuation of existing trail-riding opportunities, a major reduction in miles is not expected from that decision.)

At this time, new trails are not anticipated to be built on nearby State, County or private lands.

3.13.3 Recreation Settings and Experiences

Recreation settings and experiences result from what a person sees, hears, and experiences on Forest Service trails. Conflict can arise when one type of recreation setting is preferred but not available. Recreation setting and recreation experiences are used in this analysis to help describe the differences between alternatives for conflicts between motor vehicle use and other recreation in the RWD area.

3.13.3.1 Affected Environment

The physical nature of the Forest, low level of managerial regimentation, lack of infrastructure, and lack of crowding result in a “semiprimitive” recreation setting label for most of the RWD landscape. The Forest Service defines semiprimitive settings as those having few, if any, developed facilities (i.e., no campgrounds, developed trailheads, picnic sites, etc.). Signing is rustic and minimal, and managerial presence is very subtle. Such settings offer a high probability of solitude, closeness to nature, the need for self-reliance, high to moderate challenge and risk, and some evidence of others.

Within the semiprimitive category, there are two sub-classifications. Semiprimitive Nonmotorized (SPNM) and Semiprimitive Motorized (SPM).

Semiprimitive Motorized settings offer a moderate probability of solitude, closeness to nature, and a high degree of challenge and risk. Motorized use is visible and audible within a landscape that is predominately natural-appearing. SPM settings might contain trails used by motorcycles, or primitive roads such as jeep trails. They don’t normally include “better than primitive” roads.

The semiprimitive motorized setting label is appropriate in many parts of the RWD area because motor vehicle sound is intermittent and not constant. Levels of use are low to moderate. There is not a ‘steady stream’ of riders so there is not a ‘steady stream’ of sound produced currently nor is that situation anticipated.

Semiprimitive Nonmotorized settings are similar, except that motorized use is not visible or audible.

Because this project does not change the physical nature of the forest setting, this analysis will focus on the factor that does change, which is motor vehicle sound. Sound may irritate or annoy a listener, interfere with the listener's activity, or in some other way be distinguished as unwanted. Data is not available to quantify to what degree motor vehicle sounds effect recreationists in the RWD area. Anecdotally, commenters have provided their experiences and how sound affected them. Some commenters have said they alter their choice of trail to avoid hearing or encountering motorcycles.

Many guides have commented that motorcycle sound diminishes their clients' experience because of noise both on the trail and in camp or while fishing and hunting. Guides express concern that motor vehicle sound may deter their guests from returning or recommending the service to other interested clients.

Motorcycle engine sounds are assumed to be 96 dBA or less. All motorcycles, ATVs and UTVs sold in the last few years meet this Colorado State standard.

The amount of sound that a person hears changes when a topographic feature blocks or alters the sound. The duration of engine sound can also vary depending on topography, vegetation, and other factors. The effect of sound can also change if the background sounds are louder (like a waterfall) however there are very few places where the background would be different so it was not analyzed further.

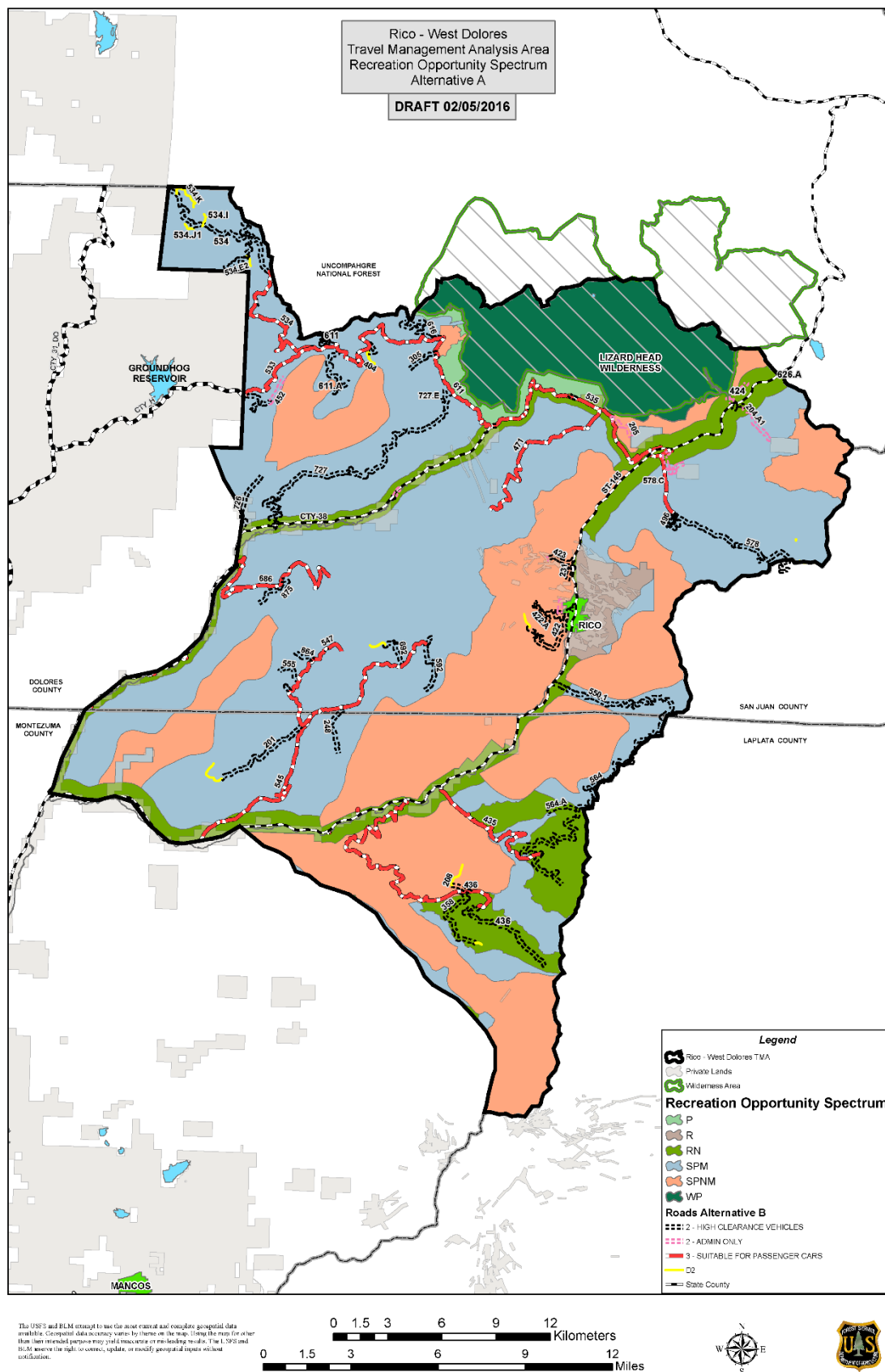
The Forest Service mapping guidelines for recreation settings suggest that semiprimitive areas occur in areas approximately ½ mile or more from 'better than primitive' roads and that semiprimitive nonmotorized areas would generally occur ½ mile from primitive roads or motor vehicle trails. Topography can be used when drawing SPM and SPNM areas²¹. For example, if a steep slope exists next to a highway or road, the 'buffer' area could be narrowed because the sound influence from the highway would be blocked by the slope. These mapping guidelines provide a rough method for displaying those areas where sound would not be present (SPNM areas). The alternatives can then be compared for the number or size of SPNM areas. This analysis assumes an increase in SPNM area equates to a decrease in motor vehicle sound effects on nonmotorized recreation experiences.

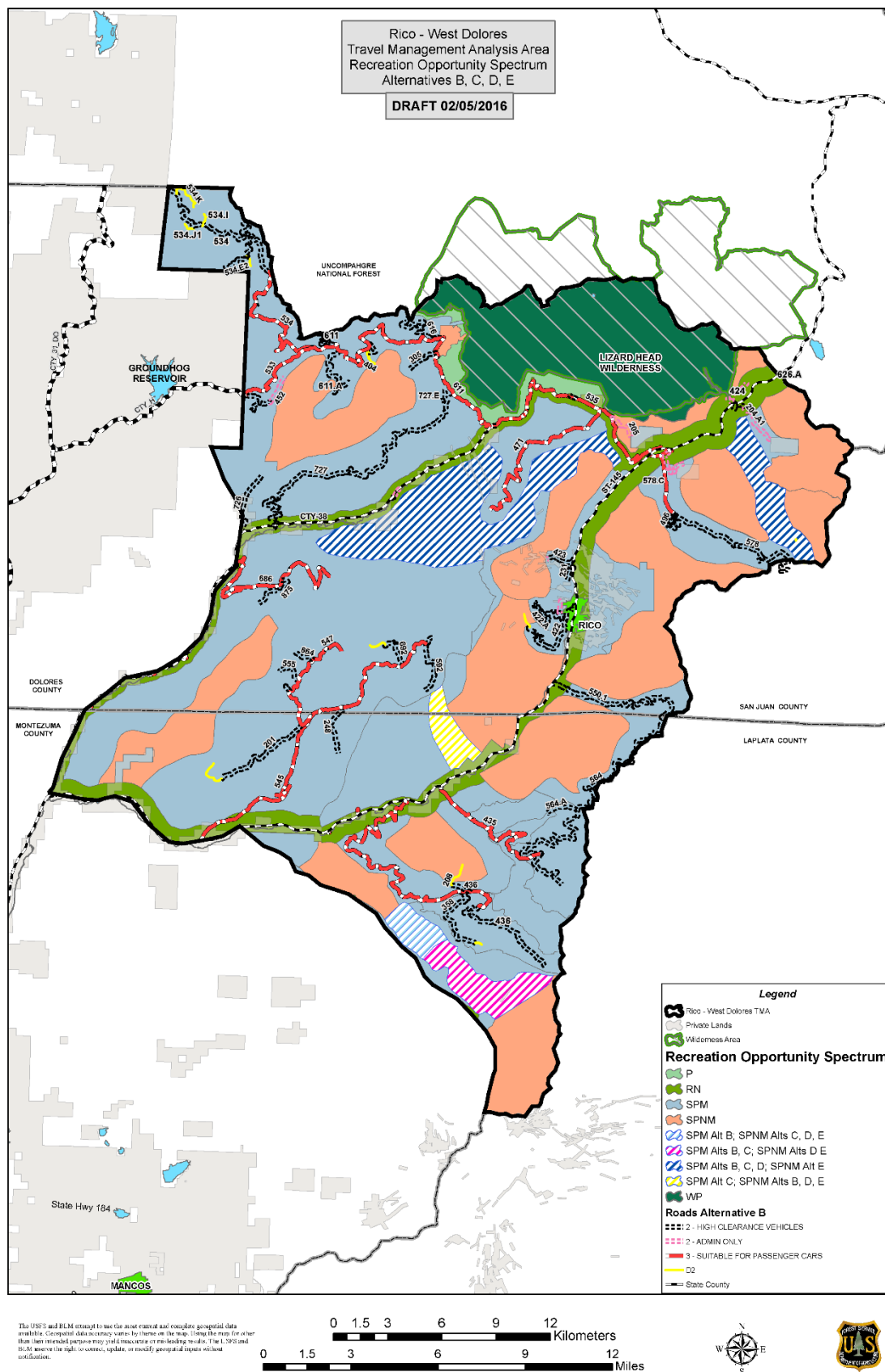
One assumption is that, through the provision of a diverse set of opportunities being provided, the ability to find quality outdoor recreation is best assured. The RWD area currently provides SPNM settings along a number of trails. The alternatives expand those areas as displayed in the effects section below.

3.13.3.2 Effects of the Alternatives

SPM and SPNM areas were digitized for each alternative on the computer screen with topographic features taken into account. The maps were drawn using the mapping guidelines described above. Polygons are not exact but provide the relative difference between alternatives. Other recreation settings were also mapped such as Primitive and Roaded National Settings. But the differences between alternatives occur primarily in the SPM and SPNM settings.

²¹ These distances are described in Table 3 – Remoteness Criteria in the ROS Users Guide





The table below displays acres of SPM and SPNM settings by alternative

Table 3-35 SPM and SPNM settings by Alternative

Recreation Opportunity Setting (ROS)	Alt A (No Action)	Alt B (Proposed Action)	Alt C	Alt D	Alt E
Semiprimitive Motorized (SPM)	120,360	141,578	141,771	137,348	123,513
Semiprimitive Nonmotorized (SPNM)	76,277	65,455	65,263	69,685	83,520

The table below describes trail areas that would change between SPM or SPNM settings depending on the Alternative. Areas with no roads or trails would also fall into the SPNM setting but are not discussed because they do not provide opportunity for recreation use other than cross-country nonmotorized use (which is rare outside of hunting) Maps of anticipated changes to recreation settings are shown following this table.

Table 3-36 Semiprimitive Motorized and Nonmotorized Settings by Alternative

General Area	Alt A	Alt B	Alt C	Alt D	Alt E
Bear Creek drainage Grindstone to Hwy 145	SPM setting – this unroaded drainage is bisected by a motorized single track trails.	SPM setting – motorcycle use in the middle section creates SPM setting even though lower 1/3 is closed to motorcycles	SPM same as B even though Little Bear closed to motorcycles	SPNM setting – although distant engine sounds from Hillside drive and Haycamp mesa may be heard down in the drainage, SPNM settings are provided	SPNM
Salt Creek and Ryman Trail areas	SPM - This unroaded area is bisected by one motorized	SPNM – this unroaded area is entirely SPNM because Ryman trail would be managed for	same as B	same as B	same as B

General Area	Alt A	Alt B	Alt C	Alt D	Alt E
	single track trail	nonmotorized use			
East Fork trail area,	SPM – This unroaded area is bisected by one motorized single track trail	same as A	same as A	same as A	SPNM because East Fork trail does not include motorcycle use
North Calico, Johnny Bull, upper end of East and West Fall Creek Trails	SPM – only one road FR471 and the trails bisect this area	SPM	SPM	SPM	SPNM – except for the FR471 corridor the area changes to an SPNM setting.
Winter Trail and lower end of East and West Fall Creek	SPM – proximity to Cty Rd 38 and FR471, and 611 make this a SPM area	SPM – although trails are nonmotorized, nearby roads create a SPM setting	Same as B	Same as B	Same as B
Horse Creek, and Burnett Trails	SPM setting outside of the immediate vicinity of town	SPNM setting on the slopes above the town	SPM setting with Burnett trail motorized	Same as C	Same as C
Tenderfoot Trail	SPNM setting	SPNM	SPM with motorcycle use on Tenderfoot Trails	SPNM	SPNM

3.13.3.2.1 Forest Plan Recreation Opportunity Spectrum Map

The selected alternative would result in a change to the Forest Plan Recreation Opportunity Spectrum Map for the RWD area. These changes will set desired conditions relative to ROS for the RWD area to be applied now and in the future.

3.13.3.3 Effects of the Alternatives

Alternative A: Alternative A provides SPNM opportunities where current nonmotorized trails occur. These areas include the Tenderfoot/Schoolhouse/Sectionhouse trail areas, the Salt Creek trail area, and areas along the Colorado Trail connected to the Hermosa landscape. The remainder of the trail areas

are SPM. The current Forest Plan map applies a Roaded Natural setting to areas around FR358 and FR564. Roaded Natural labels would apply to highly roaded areas with significant evidence of alternations to the landscape.

Alternative B: This alternative increases SPNM opportunities on the slopes west of the Town of Rico and in the vicinity of the Ryman trail. Although the Winter Trail and Spring Creek are nonmotorized in this Alternative, nearby roads or motorized trails maintain the general area as SPM. Based on this analysis, the areas surrounding FR358 and 564 would be changed from Roaded Natural to SPM. A SPM setting is more appropriate of this area because the stored roads are vegetated and would not receive general public use.

Alternative C: SPNM opportunities are similar to Alternative B, except the Burnett trail area would connect to other SPM areas and not be SPNM.

Alternative D: SPNM opportunities would expand in the Bear Creek drainage. The remainder of the analysis area would be similar to Alternative C.

Alternative E: SPNM opportunities would expand in the Bear Creek drainage, East Fork trail area and the northern section of the Calico NRT area. The remainder of the landscape would be similar to Alternative C.

For those visitors who feel that motor vehicle sounds detract from their recreation experience Alternative E provides the least sound impacts followed by D, and A, B and C are similar.

3.13.4 Nonmotorized Recreation – Physical Impacts

3.13.4.1 Affected Environment

The physical impacts of motor vehicle use to nonmotorized recreation experience can include trail tread impacts and discomfort or concern during passing a motor vehicle. The differences between alternatives for impacts to trail tread are described in the Trail Maintenance section of this DEIS.

Examples of concerns while passing motor vehicles occur across all the different types of nonmotorized use. One example, is pack stock may meet a motorcycle on a narrow trail where there are no turnouts or where there are steep side hills that prohibit either the pack stock or motorcycle from turning around.

Although nonmotorized users may hear the oncoming motorized traffic they may not take advantage of areas to where safe passage is allowed or there may not be a safe place to wait for the traffic to pass. In addition, some motorcyclists may not understand their “Share the Trail” responsibility that includes yielding the right of way to non-motorized users.

A similar concern can occur when groups of nonmotorized users pass each other on the trail. This problem is not addressed in detail here because the analysis focuses on motor vehicle use. It should be noted however, that removing motorcycles as a managed use does not eliminate passing issues on narrow sections of trail.

Commenters also raised concern that motor vehicles detract from wildlife viewing opportunities on trails. Particular trails of concern pass through large grassy openings where elk or other wildlife can be viewed from a distance.

3.13.4.2 Effects of the Alternatives

The potential for passing issues is greatest in Alternative A, somewhat less in the Alternatives B, and C, even less in Alternative D and least in Alternative E.

Wildlife are most often present in openings during the hours around dawn or dusk. Most recreation use occurs in the later hours or middle of the day. All alternatives minimize effects because motor vehicle use occurs on a designated system of roads and trails. However, motor vehicle sounds could detract from wildlife viewing opportunities and this affect is greatest in Alternative A, somewhat less in the Alternatives B, and C, even less in Alternative D and least in Alternative E.

3.13.4.3 Cumulative Effects

Other impacts to wildlife viewing could result from nonmotorized use of trails especially when off-leash dogs accompany recreationists.

3.13.5 Nonmotorized Recreation Patterns of Use

3.13.5.1 Affected Environment

3.13.5.1.1 Regional Opportunities

There are more roaded areas on the Dolores District than trailed areas. Much of the landscape on the Dolores District has an extensive road system. Although less represented than roads, trails occur across the District that are managed for horse, hike, and mountain bike. In some trail areas, the emphasis is on certain types of use. For example, Boggy Draw and the “Phil’s World” trail system (which is managed by the Bureau of Land Management) are primarily for used by mountain bikers.

3.13.5.1.2 RWD Area

The Colorado Trail and Navajo Lake Trail are the most popular trails in the RWD area. Forest Service roads provide easy access to sections of the Colorado Trail, which crosses the ridgeline of the La Plata Mountains and offers ‘world-class’ long-distance views of mountain ranges. Dolores District Recreation Staff have encountered visitors from out-of-state as well as from other countries on the Colorado Trail. Navajo Lake Trail is another popular designation that travels to a high elevation lake in the Wilderness Area.

The Colorado Trail and Lizard Head Wilderness trails are the most popular hiking trails because of the outstanding scenery they provide. Local residents primarily day hike, although some of them backpack in and camp overnight. Other popular hikes are on Bear Creek, Fish Creek (for fishing as well as hiking), Geyser Spring, and Priest Gulch Trails. Local residents also use Calico Trail and trails connecting to it, such as Burnett Creek, East and West Fall Creek, Horse Creek, and Johnny Bull Trails.

Bear Creek and Priest Gulch Trailheads are located on Hwy.145. People travelling this highway often stop at these Trailheads for a break and to enjoy the Dolores River and creeks. Short day hikes up the first few miles of these trails are popular.

Another entry point to the Bear Creek drainage is Gold Run Trail, which intersects with Bear Creek Trail at the midpoint of the drainage. Visitors use Forest roads or trails on Haycamp Mesa to reach Gold Run Trail. Although fewer people use Gold Run Trail to reach the drainage than come up from Hwy. 145, vehicles are parked at Gold Run Trailhead on most summer weekends. Guides bring nonlocal guests to

Bear Creek to fish, usually on horse or llama pack trips. Bear Creek is sought out for these activities because it is a relatively large perennial stream in an unroaded area. Commenters describe the drainage as extremely scenic, with a “backcountry” feel.

The 13.5-mile Calico NRT follows a high ridge between mountain peaks and is quite scenic. A northern Trailhead on FR471 and Priest Gulch Trailhead (to the south, on Hwy. 145) provide access. Heaviest nonmotorized use occurs on the first few miles of the South Calico (accessed from the Priest Gulch Trailhead). Visitation on the Calico Trail is less frequent than the trails described above because these trails offer similar scenery with less effort. Calico Trail requires users to travel approximately 4 miles down from the north or 4 miles up from the south to reach high-elevation vistas.

Other trails receive less use but are still popular for nonmotorized recreation. They include Burnett Creek, Johnny Bull, and Ryman Creek and East Fork trails.

A mountain biking adventure is offered through special use permit in a hut-to-hut system that stretches from Durango, Colorado, to Moab, Utah. One of the huts is off of FR578 (the Barlow/Hermosa Road) and another is off of FR611A (on Black Mesa). Between these two huts, riders use East Fork Trail, the Groundhog Stock Driveway (a trail), and Forest roads.

3.13.5.2 Effects of Alternatives

The majority of the Colorado Trail is unaffected by this project. Under the action Alternatives (B, C, D, and E), approximately one-half mile of FR149 would be converted to a single-track, nonmotorized trail. This change is not expected to impact visitation numbers but might inconvenience some users, since FR149 would no longer end right at the Colorado Trail. Currently a section of the Colorado Trail is located on FR578B (in the Bolam Pass area) so that Trail hikers share the route with full-size vehicles, and motorcycles. Alternatives B, C, and D would convert this section of FR578B to a trail that includes motorcycle use. This would reduce but not completely eliminate motor vehicle use. Alternative E would convert FR578B to a nonmotorized trail.

Priest Gulch trail does not change under any alternative.

Alternative B would remove motorcycle use from the lower third of Bear Creek Trail. Alternative C would remove motorcycle use from Bear Creek Trail except for the section between Gold Run and Grindstone Trails. Alternatives D and E motorcycles would be removed as a managed use from the Bear Creek drainage. Although visitation is not expected to significantly increase as a result of removing motor noise from the drainage, a minor increase could occur. The creek is very popular for fly fishing and this use could expand because removing motor vehicle sounds from the drainage improves fishing experience according to commenters. The Bear Creek drainage could see an increase in nonmotorized recreation if backcountry outfitters were to request additional permitted days (a corresponding decision would require a separate analysis).

Motorcycles would continue to use the Calico NRT under Alternatives A, B, C, and D. Intermittent motorcycle sounds would occur and could be fairly constant on a summer weekend. Under Alternative E, the northern half of Calico Trail would not be open to motorcycle use. It is doubtful that recreationists would seek out Calico Trail on their own in any great number because of the availability of the Colorado Trail and Lizardhead Wilderness trails which provide similar scenery with easier access.

(this would especially true for out-of-town visitors). An increase in nonlocal nonmotorized use could occur if outfitter guides were to request additional permit days for llama packing or horse trips.

Nonmotorized recreation visitation would likely be similar to current levels under alternatives where motorcycles are removed as a managed use from Burnett Creek, Johnny Bull, East Fork, East and West Fall Creek or Horse Creek trails. These trails do not include the high-interest destinations found regionally, especially for nonlocal visitors.

All the action Alternatives (B, C, D, and E) would remove motorcycle use from Winter Trail.

Nonmotorized recreation on this trail is expected to be similar to current levels, partly due to the lack of a trailhead on County Rd 38.

Mountain bike use of the hut-to-hut route is not expected to change under any Alternative. None of the road changes under any Alternative would affect access to the huts, and trail locations would remain the same. Under Alternative E, motorcycle use would not continue on East Fork Trail. This change is not anticipated to cause an increase in the number of permit days requested for the mountain bike tours.

3.13.5.3 Summary of Effects:

An increase or decrease in nonmotorized use depends upon whether Forest visitors will 1) make additional trips to the RWD area, and 2) choose the RWD area over other areas in the region.

Many things will remain unaffected under the Alternatives. For example, trail locations would not change under any Alternative, except for a few realigned sections. Existing loops and connections would be maintained for nonmotorized recreation uses under all Alternatives. All types of use can physically share trails without overcrowding. No changes in recreation experience would occur in the popular Lizard Head Wilderness trails or the Colorado Trail.

The levels nonmotorized recreation use might increase slightly under Alternatives D and E if Bear Creek drainage becomes nonmotorized. It is impossible to measure the anticipated increase, which could materialize into outfitter guides request for more permit days. An increase could also occur if quality fisheries were maintained or enhanced in a nonmotorized setting. Nonlocal visitors might also discover Bear Creek as they travel the San Juan Skyway Scenic Byway.

Alternative E would result in only a slight increase in recreation visits because, although many more miles of trails would be nonmotorized, the area doesn't draw the number of tourists that other areas in this region do. RWD trail loops are somewhat long, arduous, and pass through miles of Forest before reaching high peak vistas. Increases in local and nonlocal nonmotorized use would be minor under this Alternative.

3.13.5.4 Cumulative Effects

The upcoming Stoner and Taylor Mesas Vegetation Management project has the potential to affect Loading Pen trail temporarily during logging operations. No other past, present or future projects are known that would alter nonmotorized recreation use of the RWD trail system.

To date no large recreation events are permitted in the RWD area and none are anticipated in the near future. Occasional weddings and family reunions take place and these are usually informal gatherings less than 75 people. A few weddings or family reunions have been permitted events. The RWD alternatives do not affect the opportunity for these types of gatherings.

Evening use of woods around the Town of Rico occurs as residents go for evening walks in the summertime has not shown evidence of resource issues as some 'user-created' pathways form. Additional trails designated for general public access and use are a low priority for Forest Service funding at this time.

3.14 COMPATIBILITY WITH ADJACENT POPULATED AREAS

3.14.1.1 Groundhog Area

3.14.1.1.1 Affected Environment

Populated areas adjacent or within the RWD area include the Groundhog Store and residents near Groundhog Reservoir, businesses along Hwy 145, residents on County Road 38 (West Dolores Road), the Town of Rico area, and residential homes at Bear Creek (Morrison) area. Private lands that are not currently 'populated' with summer or year-round dwellings are not discussed in this section.

3.14.1.1.2 Effects of Alternatives

The Groundhog OHV trail proposed under Alternatives B, C, D and E would be compatible with the adjacent private lands because 1) there are no residential houses immediately next to the trail and 2) ATV and OHV riding occurs on the adjacent private land connecting onto the National Forest lands via FR533. Other roads and OHV trails are distant from the private land boundary and would have no direct effect from noise.

During scoping business owners in the Groundhog area expressed concern about the lack of ATV or UTV riding opportunities on Black Mesa. Riding ATVs and UTVs on National Forest land is compatible and even desirable for operation of the Groundhog Store. Alternative C provides the most riding opportunity on roads, 62-inch trails including the Black Mesa area.

3.14.1.2 Hwy 145 Businesses

3.14.1.2.1 Affected Environment

Businesses along Hwy 145 (Priest Gulch Campground, Circle K Ranch) are located immediately adjacent to the Highway so that background noise of vehicles passing by occurs regularly.

3.14.1.2.2 Effects of the Alternatives

No motorized trails are proposed immediately adjacent to these businesses under any alternative.

3.14.1.3 County Road 38 (West Dolores Road)

3.14.1.3.1 Affected Environment

Residential areas along the paved portion of County Road 38 include cabins and ranches. The existing Stoner Mesa trail (managed for motorcycle use) passes across private land and a bridge in close proximity to a private cabin. Another existing use occurs when motorcycles travel Cty Rd 38 to make connections between single trails in the RWD area (trails that intersect the road include Stoner Mesa trail, Stoner Mesa Road to Eagle Peak Trail, Johnny Bull, and Winter/Falls Creek cutoff). Motorcycles sound louder than vehicles when they pass by cabins on County Rd 38. Currently the Winter Trail, is managed for motorcycle use in proximity to private land of the Dunton Resort. Concerns were raised

during scoping about noise effects to recreation experience on this trail. The resort also uses the trail as an outfitter guide.

3.14.1.3.2 Effects of the Alternatives

Stoner Mesa trail would continue to be managed to include motorcycle use under all alternatives. Somewhat lower levels of use are expected under Alternatives B, C and D because the Winter/Falls Creek cutoff would not be open to motorcycle use. Under these alternatives however, riders would continue to use Cty Road 38 to connect between Stoner Mesa Trail, Stoner Mesa Road to Eagle Peak, and Johnny Bull trails. Less use is anticipated for the section of Cty Rd 38 north of the Stoner Mesa Road because Johnny Bull trail does not include motorcycle use under Alternative E. No new OHV trails are proposed under any alternative immediately adjacent to County Road 38 or the cabins and ranches.

Alternatives B, C, D and E would remove motorcycle use on the Winter trail.

3.14.1.4 Town of Rico

3.14.1.4.1 Affected Environment

Currently motorcycles ride the Burnett Creek trail to the Burnett Road past some of the Rico homes to Hwy 145. Also, the Horse Creek trail currently managed for motorcycle connects to Hwy 145 just outside the Town area. Residents raised concerns during scoping regarding both of these trails and the effects to neighborhood streets.

3.14.1.4.2 Effects of Alternatives

Alternative B provides the most reduction in motorcycle connections from the Town of Rico to National Forest lands. By removing motorcycle use from Horse Creek and Burnett Creek trail, there is less likelihood of motorcycles pass through the Town streets of Rico. Alternative C, D and E designates motorcycles on the Burnett trail, but also provides an alternate route south of town so motorcycles can avoid riding on the town streets.

3.14.1.5 Morrison Trail Area

3.14.1.5.1 Affected Environment

A group of residential homes or summer cabins are located on private land near the intersection of the nonmotorized Morrison trail and the motorized Bear Creek trail. The Bear Creek trailhead is located just north of the private land.

3.14.1.5.2 Effects of Alternatives

The Morrison trail passes in close proximity (a few hundred feet) to residential houses and cabins. Alternative B has the most impact because motorcycle use of the trail would occur and this would be a popular connection to the Haycamp Mesa area. Alternatives C, D and E would not include motorcycles as a managed use on the Morrison Trail. In addition, Alternatives C, D and E would not include motorcycles as a managed use on the section of Bear Creek trail closest to the residential buildings.

3.14.1.6 Summary of Effects

Alternatives B, C and D reduce impacts to populated areas by 1) reducing motorcycle connections on town streets through Rico, 2) removing motorcycle use from the Winter trail, and 3) providing OHV trails compatible with the Groundhog area. Alternative E minimizes impacts to populated areas even further

by reducing the amount of motorcycle riding on County Rd 38 because trail connections would no longer be needed on that road. None of the alternatives alters current conditions for the businesses along Hwy 145.

3.14.2 Local Government Plans

This section examines whether the Alternatives described in the Rico-West Dolores Roads and Trails (Travel Management) Project DEIS are consistent with local land use plans. The following discussion primarily involves the local governments in the counties of Dolores and Montezuma, Colorado, referred to collectively as the analysis area.

3.14.2.1 *Affected Environment*

3.14.2.1.1 Dolores County

Dolores County's 2012 *Development and Land Use Regulations* (<http://www.dolorescounty.org/wp-content/themes/dolores-county/pdf/departments-and-contacts/Road%20and%20Bridge.pdf>) state that the County places great importance on "maintaining and promoting the historic access and use of the public lands within and adjacent to Dolores County" in order to protect health, safety, welfare, and economic opportunities within the County (p. 23). These uses include hunting-related activities, grazing, agriculture, resource exploration and extraction, and broad recreational access, including motorized and nonmotorized activities.

Furthermore, the *Regulations* express the strong desire of Dolores County commissioners to be involved in the formulation, decision-making, and implementation of proposed state or federal actions that could cause significant impacts on the use of public lands located within or adjacent to Dolores County. The *Regulations* refer specifically to closures and restrictions put on any roads or trails previously open to travel. They also describe a process to be implemented regarding the commissioners' involvement, to include intergovernmental notification and coordination.

3.14.2.1.2 Montezuma County

The *Montezuma County Comprehensive Land Use Plan* (<http://montezumacounty.org/web/wp-content/uploads/2015/06/comp-plan2.pdf>), last amended in 2004, reports that 70 percent of Montezuma County is federally managed and expresses support for multiple use of these lands. "While recognizing the importance of recreation and resource protection, Montezuma County places the highest priority on the continuation of traditional and historic uses such as grazing, timber harvesting, mining and energy development" (p. 12-2). The *Land Use Plan* stresses that these uses are important to the local economy, heritage, and culture of Montezuma County.

The *Land Use Plan* also states that the multiple-use philosophy of federal agencies is "being adapted to give more weight to ecological health and less weight to commodity outputs" (p. 12-17). It maintains that "population growth has brought in increasing numbers of people who appreciate the aesthetic and recreational benefits of the federal lands, without understanding the role that commodity uses have played in the history, economy and culture of Montezuma County" (p. 12-17). According to the *Land Use Plan*, the Endangered Species Act, regulations for protecting wetlands, and predator control and reintroduction programs are of particular concern. "These policies, while well intentioned, can restrict the use of private property, limit the multiple-use of federal land and create barriers to viability of local businesses" (p. 13-1).

The *Land Use Plan* recommends community participation in federal land policy-making, planning, and decision-making processes, including the revision of the *San Juan National Forest Plan*. It reiterates that the policy of the Montezuma County Commissioners is to pursue active involvement in the management of federal lands within Montezuma County.

3.14.2.1.3 Town of Rico

According to the *Rico Regional Master Plan* (2004), Rico residents share a strong sense of place and a desire to preserve their connection to the surrounding natural alpine environment. They want to retain Rico's small-town character, promote pedestrianism within the municipality, control "nuisance noise," and protect wetlands and wildlife habitats. Many of them use the plethora of abandoned mining roads around Rico for hiking, mountain biking, and hunting big game. "Trail use is one of the principal forms of outdoor recreation for community members and visitors alike" (p. 32).

The goals, policies, and objectives articulated in the *Rico Regional Master Plan* reveal that residents favor quiet forms of recreation. For example, Objective #5 states that the Town seeks to "preserve open space areas for recreational use, such as hiking, bicycling, horseback riding, nature studies, fishing, and individual escape and introspection" (p. 26). (The proposed Rico River Park project calls for nonmotorized trails for pedestrian, biking, cross-country skiing, and snowshoeing.) Nonetheless, a goal is to "establish and maintain a Regional Trail System for a broad range of outdoor recreational activities" (p. 28).

3.14.2.2 *Effects of the Alternatives*

County commissioners and representatives from the Town of Rico have participated in pre-NEPA and scoping meetings. In addition, District Ranger Derek Padilla has met monthly with each of the County Boards of Commissioners to provide updates on this and other projects on the Dolores Ranger District.

Each of the alternatives provides a network of roads and trails that accommodate livestock grazing, timber harvesting, and gathering of wood products. The effects to these activities from each alternative are described in Chapter 3 of this DEIS. This project does not affect access for mining and energy development because it applies to general public use and not to permitted activities. Although the alternatives vary in terms of "walk-in" versus "drive-in" hunting, none of them is expected to change the overall number of local and nonlocal hunters visiting the RWD area. As described in Chapter 3 of this DEIS, opportunities for motorized and nonmotorized recreation on trails differ from alternative to alternative. However, none of the alternatives completely eliminates road and trail access. Roads and trails provide recreation opportunities, while the spaces between roads and trails provide wildlife security and watershed protection. Colorado Roadless Areas are not changed under any alternative.

To varying degrees, the alternatives respond to the Town of Rico's goals for providing nonmotorized trails for pedestrian and biking recreation and a broad range of outdoor activities. Alternative A might conflict with these goals because of the number of intersecting trails that include motorcycle use. Alternatives B, C, D, and E take steps to address the goals by closing or rerouting trails so that motorcycles access the Town via Hwy. 145. Therefore, Alternatives B, C, D, and E are not in conflict with the *Rico Regional Master Plan*.

Although the alternatives vary in terms of recreation trail opportunities, no alternative appears to be in conflict with the goals, policies, or objectives described in local land use plans.

3.15 HUNTING

Data for this section was derived from Colorado Parks and Wildlife sources. Staff from CPW assisted with interpretation of data and the final conclusions about effects are those of Forest Service staff.

3.15.1 Affected Environment

Discussions about elk hunting include two main topics 1) motor vehicle access to elk hunting areas and 2) motor vehicle disturbance to elk hunter experience.

The Rico West Dolores analysis area includes the following Game Management Units (GMUs).

Table 3-37 Acres by Game Management Unit

GMU	Acres
71	242,791
70	5,300
73	8,253
74	34

Game Management Unit (GMU) 71 is 256,377 acres and Rico West Dolores analysis makes up 95% of that hunt unit. Therefore, this discussion will focus on GMU71.

Colorado's elk hunting seasons begin with archery season in late August and end with the 4th general rifle season in mid-November.

In 2015, archery season opens on August 29. The 4th rifle season ends on November 15. Within this timeframe **limited** licenses are available for GMU 71 through a draw process that includes: muzzleloader (either sex and antlerless); 1st season (either sex elk), 2nd and 3rd season (antlerless only elk); and 4th season (antlered and antlerless elk). In addition to these licenses, which are controlled and distributed through the draw process, **over-the-counter** or **unlimited** antlered elk licenses are available for the 2nd and 3rd rifle seasons and **over-the-counter** or **unlimited** either sex elk licenses are available for the archery season.

These hunting seasons occur in the fall and dates vary. For 2015 the dates are:

- August 29 – September 27 for Archery
- September 12 – 20 for Muzzleloader
- October 10 - 14 for 1st season
- October 17-25 for 2nd season
- October 31 – Nov 8 for 3rd season
- November 11 - 15 for 4th season

Changes in limited license hunters are typically depicted by licenses available and are not a good indicator of hunter demand. However, if there are many more 1st choice applicants than licenses available through the draw process than if some hunters choose not go to GMU 71 there are many others "waiting in line." The tables below describe the number of licenses and applicants for the years 2012-2015.

Table 3-38 Licenses and Applicant totals for years 2012-2014

	2012		2013		2014	
	number of hunters	1st choice ap	number of hunters	1st choice ap	number of hunters	1st choice ap
2nd season cow	188	305	108	243	122	255
3rd season cow	69	107	72	132	60	153
4th season - cow	4	10	3	10	0	8

As shown in this table there are many more applicants than licenses available for the 2nd, 3rd and 4th elk cow seasons.

3.15.1.1 -Unlimited (Over-The-Counter) Licenses

There may be however, a potential effect in the over-the-counter sales. If a person who previously hunted in the RWD area, chose not to purchase an over-the-counter tag the total number of hunters that use RWD area could decrease. Later in this section we will go into more detail about the factors that affect hunter satisfaction.

An over-the-counter (OTC) tag can be used anywhere in the State of Colorado so it is impossible to know, looking at license sales data whether or not hunters chose to hunt in GMU 71 in the past or will in the future. Some people might apply through the draw for antlerless elk and if they are unsuccessful follow up by buying an over-the-counter tag. OTC tags are purchased from local vendors in Cortez and Dove Creek or online.

The following numbers show OTC estimates for Hunt Unit 71. These are estimated hunter numbers from harvest statistics - over-the-counter sales.

Table 3-39 Over The Counter Sales

	number of hunters in 2012	number of hunters in 2013	number of hunters in 2014
archery OTC either sex*	844	839	815
Muzzle-loader either sex	211	192	131
2nd season OTC bull*	737	717	700
3rd season OTC bull*	478	474	448

Permits for the hunt seasons shown in the table below cross multiple GMUs. The numbers for these hunt seasons are estimated hunter numbers from harvest statistics, license is valid in GMUs 70, 71, 72, 72, 74, and 711 (draw statistics aren't available specific to GMU 71)

	number of hunters in 2012	number of hunters in 2013	number of hunters in 2014
First Season**	464	431	358
4th season - either sex**	46	26	37

Interestingly the number of hunters has steadily declined over the past three years in GMU 71. This includes all hunters and OTC hunters. There are several possible reasons such as a decrease in the number of hunters in general, a decrease in hunter satisfaction, an increase in off road motorized use, or numerous other factors. It could also be a combination of factors such as an increase in off road motorized use causing animals to shift their behavior and distribution which in return makes them more difficult to find, decreasing harvest, and ultimately decreasing hunter satisfaction.

3.15.1.2 Current Types of Hunter Access in the RWD Area

The following categories were created for this report and do not represent categories or official designations from CPW or other agency.

Drive In Park and Walk: Hunters usually drive a motor vehicle to the end of a road, park and walk into their hunting areas. Hunters walk cross-country or along single track trails. A smaller percentage of hunters use motorcycles on single track trails for access to hunting areas. When an animal is killed, the meat is carried back to the vehicle or ATV/UTV by hand or with a cart. The FS is aware of at least one hunter who also packs meat out on single track trails with a motorcycle.

Drive in Horses, Park and Ride: Other hunters trailer horses to the Rico West Dolores and park at trailheads or at the end of Forest Roads. These hunters may ride, or lead horses for single day or overnight trips through their hunting area. The horses are then used to pack the meat out and back to the vehicle/horse trailer.

Drive and Scout: In roaded areas (Taylor Mesa, Stoner Mesa, vicinity of Groundhog and Lone Cone), some hunters drive a vehicle, ATV or UTV to scout for game. These hunters keep closer to their vehicles than a 'walk-in' hunter who might spend an entire morning or most of the day away from the vehicle. The distance to carry meat back to the vehicle is shorter in roaded areas; however, driving cross-country to retrieve game with an ATV/UTV is not allowed or proposed in the Rico West Dolores landscape.

Because of the presence of roaded and un-roaded areas, this landscape provides for all of the above hunter experiences making the entire RWD landscape popular for hunting.

3.15.2 Effects of the Alternatives

Whether or not a hunter chooses to buy an over-the-counter permit for GMU 71 is difficult to predict. There are many factors that affect a hunters experience as described in *The Sportsman's Voice, Hunting and Fishing in America* by Mark Damian Duda, Martin F. Jones and Andrea Criscione. Hunting is described as a complex cultural phenomenon closely linked to naturalistic values, one's identity, and the American family and is also described as a "powerful and meaningful pursuit". Reasons for hunting include a) for meat, b) to be with family and friends, c) for the sport and recreation, d) to be close to nature. Page 70 includes the following, "It would be too easy to simply assume that hunting satisfaction

is directly linked to harvesting game and to leave it at that. Instead, hunters derive many satisfactions from hunting in addition to bagging game.”

Another factor that influences whether or not a hunter chooses an area is the status of the elk herd, itself. If the herd is healthy, with numerous animals that are visible, hunters usually express satisfaction with the hunting experience. Elk in Colorado are highly valued for hunting because their size.

3.15.2.1 Hunter Access

The following paragraphs discuss access provided by the road and trail system. The effects of motor vehicles on hunter experience through noise disturbance, including effects of illegal travel that may cause disturbance is discussed later in this report.

Access to hunting areas could influence whether or not a hunter chooses to buy an OTC tag for the RWD area. All of the Rico West Dolores Alternatives maintain the Forest Road system in a similar configuration as exists today and access to areas for hunting is similar as it has been since 2010. Prior to 2010 there was some additional access available by driving ‘cross-country’ on logging roads into Groundhog Point, around Lone Cone, and on Black Mesa area. However, when cross-country travel was eliminated on the District, these routes were closed to use by vehicles, ATVs and UTVs. An alternative was considered to re-instate the ‘cross-country’ designation but this alternative was eliminated from detailed study (see Chapter 2 of the DEIS).

Alternative A: Under Alternative A, the road system is the same as shown on the current Motor Vehicle Use Map. Hunters would use the Forest roads and Willow Divide 50 inch ATV trail. There are no fall timing restrictions on ATV, UTV or motorcycle use.

Alternative B: Under Alternative B, minor changes to the road system would occur and there is the addition of short UTV loops near Groundhog and Lone Cone. The Willow Divide trail remains in the same location but allows for 62 inch UTVs. With the addition of UTV trails, Alternative B results in a minor increase in hunter access compared to Alternative A. At the same time, Alternative A and B continue to provide spaces of land between the roads and UTV trails for hunters to walk or ride horses. Alternative B includes a fall timing restriction on motorcycle use of single track trails. This eliminates the opportunity to use a motorcycle to access hunting areas in the un-roaded areas and eliminates the option of using a motorcycle on the trails to help pack out meat. Again, it is a relatively few individuals that do this currently (observations by FS staff).

Alternatives C, D and E: Alternatives C, D and E are similar to Alternative B in terms of hunter access. Although some trails would be closed to motorcycle use under Alternatives D and E, this would be the same as Alternative B because of the motorcycle fall timing restriction.

3.15.2.2 Hunter Experience

Disturbance from motor vehicles: A hunter who has invested considerable time and effort walking in the early morning to an area and finds a herd of animals, can be upset when an ATV driving on a closed road or cross-country appears either 1) causing the elk to move away or 2) making the walking hunter angry because the time invested walking has been ‘wasted’ in their opinion. Although signs alert hunters to the presence of motorcycles on single track trails in the RWD area, some hunters expressed the same frustration of walking a trail and hearing a motorcycle. Motorcycles cover approximately 50 miles in a typical day-ride and therefore they have the potential to cause motor vehicle disturbance

across a relatively large area. It should also be noted however, that the number of motorcycle riders using the trails declines in the fall compared to the summer months.

Alternative B: Alternative B maintains unroaded/untrailed spaces for 'walk-in' hunting. Groundhog Point and Black Mesa are examples of unroaded spaces for hunters to walk or ride horses and hunt away from full size vehicles, ATV and UTVs. At the same time, Alternative B provides a road system similar to today's road system, and a few additional miles of UTV trail that provide access to hunting areas. Alternative B implements timing restrictions on motorcycle use of single track trails during some, but not all of the fall hunting season. This increases the size of the already large tracts of land available for 'walk-in' hunting across the roadless areas.

Motorcycle disturbance similar to current levels would occur during Archery season. Again, like today, signs alert hunters to the potential for motorcycles on these single track trails.

Alternatives C, D and E: Alternatives C, D and E are similar to Alternative B because the same fall timing restriction on motorcycle riding would occur. Alternative C, includes an OHV trail on Black Mesa and that trail would also have a timing restriction that would provide for 'walk-in' hunting on Black Mesa during the rifle seasons. The OHV trail would be open on Black Mesa during archery season. This has the potential to detract from the archery experience on Black Mesa.

Illegal riding by ATVs and UTVs is expected to continue under all alternatives but is also expected to decline over time for all alternatives. Most hunters strive to follow the published Motor Vehicle Use Maps and signs. Past confusion about which road is open and which road is closed should be clarified by the final decision for this project and consistent signing and messaging should lessen cross-country or closed road riding and decrease disturbance to hunters from motor vehicle noise.

3.15.2.3 Status of Elk Herd

Although the alternatives vary in terms of enhancing or detracting from elk habitat, the elk herd is anticipated to remain visible and numerous to hunters. The current E-24 Disappointment Creek Herd Management population objectives are currently being met and would be expected to be met under all alternatives.

3.15.3 Summary of Effects of Alternatives

Based on the discussion above, OTC tags sales for rifle seasons may be slightly influenced by changes in travel management. This is because 1) hunter access to hunting areas remains similar to current access 2) hunter experience is maintained or improved by decreasing illegal travel and maintaining 'walk-in' experiences and 3) more elk may be present due to less motorized use. The current declining trend in OTC sales may be offset by an increase in sales by 'walk-in' hunters under Alternatives B, C, D and E as the spaces between the open roads and trails experience less illegal off-road ATV/UTV or vehicle driving and because of the motorcycle timing restriction.

In 2015 the archery season ran from August 29th through September 27th. If timing restrictions were implemented today, there would be a 10 day overlap between motorcycle riding on single track trails and archery hunting. Motorcycle restrictions would apply on September 9th so the remaining 19 days of archery season would include no motorcycle disturbance on single track trails. If a similar set of dates applies in the future there will be an overlap between the first week or so of archery season and motorcycle noise on single track trails. Motorcycles cover many miles in a day so may impact many miles of trail with noise disturbance to archery hunters.

There is no timing restriction under Alternative A so trail use by motorcycles would overlap the entire archery season. Of the action alternatives, the highest number of trails where archery hunters may be impacted occurs in Alternatives A and C, followed by B. Alternative D removes this impact from the Bear Creek drainage trails and Alternative E removes this impact from the north Calico and its connecting trails, East Fork Trail and Bear Creek drainage.

If the archery hunter is sitting game immediately adjacent to the trail a motorcycle passing by could impact that situation. If the archery hunter walks off of the trail and hunts untrailed areas there is less chance of hunter disturbance. If the archer is more than ½ mile from the trail we assume no impact from the motorcycle disturbance (see wildlife section of this DEIS).

The same hunter experience factors discussed above for rifle seasons also apply to archery hunters. Archery hunter access on forest roads to hunting areas remains similar to current access, elk herds are expected to be visible to hunters, and the spaces between the open roads and trails should experience less illegal off-road ATV/UTV or vehicle driving. Therefore the archery hunting experience is maintained under all alternatives with improvements in hunter experience under Alternatives D and E compared to Alternatives A, B and C. Some archers may choose not to purchase an OTC tag in the future because of the presence of motorcycles during the first week or so of the season. This would be a very minor reduction to overall hunting in the RWD area.

3.16 SOCIO-ECONOMIC

This section addresses economic contributions from recreation activities and whether or not economic contributions differ by alternative. This section also address values, beliefs and attitudes related to recreation in the RWD area.

3.16.1 Affected Environment

3.16.1.1 Methodology

Economic Analysis

Economic impacts were modeled using IMPLAN Professional Version 3.0 with 2013 data. IMPLAN is an input-output model, which estimates the economic impacts of projects, programs, policies, and economic changes on a region. IMPLAN analyzes the direct, indirect, and induced economic impacts. Direct economic impacts are generated by the activity itself, such as visitor spending associated trail or route use on the San Juan NF. Indirect employment and labor income contributions occur when a sector purchases supplies and services from other industries in order to produce their product. Induced contributions are the employment and labor income generated as a result of spending the household income generated by direct and indirect employment. The employment estimated is defined as any part-time, seasonal, or full-time job. In the economic impact tables, direct, indirect and induced contributions are included in the estimated impacts. The IMPLAN database describes the economy in 536 sectors using federal data from 2013.

Data is not available to predict the economic contributions for different types of use such as the difference in spending between mountain bike, motorcycle, hike or horse use. Data is available for economic contributions for local and nonlocal use and overnight versus day use. Therefore economic contributions are described in these terms rather than by type of use.

Data on use levels under each alternative were collected from Forest Service resource specialists. In most instances, the precise change is unknown. Therefore, the changes are based on the professional expertise of Forest Service resource specialists. Regional economic impacts are estimated based on the assumption of full implementation of each alternative. The actual changes in the economy would depend on individuals taking advantage of the resource-related opportunities that would be supported by each alternative. If market conditions or trends in resource use were not conducive to developing some opportunities, the economic impact would be different from what is estimated in this analysis.

Social Analysis

Social effects analysis uses the baseline social conditions presented in the Affected Environment section, National Visitor Use Monitoring (NVUM) profiles (USFS 2015), and public comments to discern the primary values that the San Juan NF provides to area residents and visitors. Social effects are based on the interaction of the identified values with estimated changes to resource availability and uses. Key determinants of quality of life that may be affected by route and area designation were identified through the scoping process.

3.16.1.2 Information Sources

Key data sources for the social and economic analysis include:

- U.S. Census Bureau, American Community Survey
- National Visitor Use Monitoring program data for the San Juan NF, last collected in FY2006
- Public scoping comments

3.16.1.3 Incomplete and Unavailable Information

1. The IMPLAN software assumes a static economy – in other words, the industry composition and trade linkages in 2013 will be the same in 2023.
2. The relationship between recreation opportunities and visitor use is uncertain.
3. Changes in recreation preferences are uncertain.

3.16.1.4 Spatial and Temporal Context for Effects Analysis

The San Juan National Forest is located in southern Colorado and the project area is located in Dolores and Montezuma counties; along Highway 145 from north of Dolores, Colorado to Lizardhead pass. Forest Service economists define economic analysis by selecting counties, to create a contiguous set, that are the source of at least 50 percent of recreation visitation. About 50 percent of NVUM survey respondents came from Archuleta, Dolores, La Plata, and Montezuma counties in Colorado and San Juan County in New Mexico (USFS 2015). The affected environment section below presents characteristics of communities within these counties relevant to the discussion of effects.

The temporal boundaries for analyzing effects to the social and economic environment extend 10 years into the future. This is the period for which social and economic consequences are foreseeable. Social

and economic change, including changes in recreation preferences, cannot plausibly be predicted outside this temporal frame.

3.16.1.5 Demographic and Economic Characteristics

The San Juan National Forest is located in southern Colorado in Archuleta, Conejos, Dolores, Hinsdale, La Plata, Mineral, Montezuma, Rio Grande, San Miguel and San Juan counties. As noted above over 90 percent of NVUM survey respondents are from Archuleta, Dolores, La Plata, and Montezuma counties in Colorado and San Juan County in New Mexico.

Changes in a region's population can be attributed in part to natural change (births minus deaths) and in part to net migration, which can affect the availability of housing, services, and jobs. Migration was a driving force behind population change in Archuleta, La Plata and Montezuma Counties (78, 68 and 64 percent, respectively) on an average annual bases between 2000 and 2014; however natural changes were still the leading cause of population change in Dolores, San Juan County, NM and the analysis area as a whole (Table 3-40) (U.S. Department of Commerce, 2015).

Table 3-40. Demographic Characteristics by County

Location	Population (2014)	Avg. Annual Natural Change (2000-2014)	Avg. Annual Net Migration (2000-2014)	Median Age (ACS 2013 5-year Estimate)²²	Share of Population Over 65 (ACS 2013 5-year Estimate)²²
Archuleta County, CO	12,244	25%	78%	47.8	19%
Dolores County, CO	1,978	100%	0%	48.2	25%
La Plata County, CO	53,989	35%	68%	38.3	12%
Montezuma County, CO	25,772	45%	64%	42.9	17%
San Juan County, NM	123,785	100%	0%	33.2	11%
Analysis Area	217,768	100%	0%	NA ²³	13%
Colorado	5,355,866	49%	51%	36.1	11%
New Mexico	2,085,572	81%	24%	36.7	14%

Source: U.S. Department of Commerce, 2015 and 2014

Amenities (the natural, cultural, and social characteristics of an area) have played an increasing role in U.S. migration. Areas characterized as having high levels of natural amenities (unique land and water features, mild temperatures, scenic quality, and recreation opportunities of a geographic region) have been shown to experience greater population growth than areas with fewer natural amenities (Johnson and Beale 1994, McGranahan 1999, Frentz et. al 2004), and this growth occurs increasingly at the boundaries of public lands (Hansen et. al 1998, Radeloff et. al 2001). In recent years communities surrounding the San Juan NF, like those in Archuleta and La Plata and Montezuma Counties, have

²² The data in this table are calculated by ACS using annual surveys conducted during 2009-2013 and are representative of average characteristics during this period.

²³ Median age is not available for regional aggregations.

become increasingly attractive because of their proximity to public lands and natural settings which provide easy access to recreational opportunities. As a steward of public lands a portion of population growth can be attributed to the scenic beauty and outdoor recreation supported by the forest.

Age groups within a population may have different recreational preferences. For instance, mobility limitations associated with age may increase the importance of easy access to recreational sites. The analysis area counties in Colorado have high shares of older residents than their state while San Juan County contains a lower share than its state. Dolores County has nearly double the share of residents over the age of 65 compared to Colorado (Table 3-53).

Table 3-42 suggests analysis area counties display varying degrees of economic insecurity: the four Colorado counties have lower median household incomes than their state and the analysis area as a whole has slightly higher unemployment than the state of Colorado. These economic characteristics suggest that changes in local employment and income may be felt by analysis area counties. San Juan NF recreation visitors spend money on lodging, food, fuel, and other goods and services in the economic analysis area. The designation of routes and areas may affect recreation visitation and spending. As a result, local employment and income may change. The economic consequences analysis addresses potential changes in employment and income in the context of these local economic characteristics.

Table 3-41. Economic Characteristics by County

Location	Median Household Income (ACS 2013 5-year Estimate)	Unemployment Rate (BLS Local Area Unemployment 2014)	Share of Tourism-related Employment (County Business Patterns 2013)
Archuleta County, CO	\$48,933	6.0%	17.6%
Dolores County, CO	\$37,750	4.0%	38.5%
La Plata County, CO	\$58,080	4.2%	19.0%
Montezuma County, CO	\$43,188	6.1%	28.3%
San Juan County, NM	\$48,196	6.3%	21.7%
Analysis Area	NA ²⁴	5.6%	19.4%
Colorado	\$58,433	5.0%	16.1%
New Mexico	\$44,927	6.5%	21.2%

Source: U.S. Department of Commerce 2014; U.S. Department of Labor 2015; U.S. Department of Commerce 2015b

Much of the San Juan NF recreation visitor spending contributes to economic activity in travel and tourism-related sectors. These sectors include retail trade, passenger transportation, accommodation and food, and arts, entertainment, and recreation. Travel and tourism sectors account for a larger share of all employment in analysis area counties than their states. This suggests that the analysis area economy is reliant on tourism (including outdoor recreation).

Recreation Visitors

²⁴Median income is not available for regional aggregations.

National Visitor Use Monitoring data was last collected on the San Juan NF in fiscal year 2011. Approximately 1,167,936 visits to the San Juan NF occur each year (USFS 2015b). About 16 percent of survey respondents indicated that they participate in non-water based motorized activities (OHV use, other motorized activity and motorized trail activity) during their trip, with 4 percent reporting that motorized use was the primary purpose of their trip (USFS 2015b). Survey respondents indicated that non-motorized trail use (horseback riding, biking and hiking) accounted for about 66 percent of all use, with 34 percent reporting that these non-motorized uses were the primary purpose of their trip (USFS 2015b).

Economic Contributions

On their way to the planning area, and once they arrive, forest visitors spend money on goods and services such as gas, food, lodging, and souvenirs. In contrast to many other resource and land uses, outdoor recreation is not captured by any one industrial sector. Instead, spending associated with recreational visits to these NFS lands stimulates economic activity in a range of economic sectors depicted above in Table 3-41.

Rather than measuring economic impacts, the economic analysis for recreation examined the economic contribution of outdoor recreation on the San Juan NF. While both contribution and impact analyses measure the amount of economic activity attributable to outdoor recreation within a defined area, impact analysis only includes spending by visitors who reside outside of the local region since their spending constitutes "new dollars" being injected into the local economy. A contribution analysis however, includes the effects of spending by all visitors, both those who reside in the analysis area and those who do not. Since much of the spending by local recreationists would likely be shifted to other sectors of the local economy, the results of this analysis do not reflect the loss to the local economy if recreational opportunities on the forest were eliminated. Instead, the contribution analysis shows the size and nature of economic activity associated with these recreational experiences to show how important they are to the local economy.

Outdoor recreationists participating in activities on public lands have unique spending profiles. Analyses of expenditures reported by national forest visitors has shown that the primary factor determining the amount of money spent on a recreational visit to public lands was the type of trip taken rather than the specific activity they intended to participate in while visiting (White, Goodding, and Stynes, 2013). Accordingly, annual average visitation to the San Juan NF was segmented into local and non-local visits and then by trip type. Trip segments examined in the significance analysis included:

Visitors who reside greater than 50 miles from the San Juan NF:

- Non-local residents on day trips
- Non-local residents staying overnight on the Forest
- Non-local residents staying overnight off the Forest

Visitors who live within 50 miles of the San Juan NF:

- Local residents on day trips
- Local residents staying overnight on the Forest
- Local residents staying overnight off the Forest

Expenditures associated with these visits were estimated using national forest visitor spending profiles developed by the U.S. Forest Service from NVUM survey responses. Spending profiles for average spending forests were applied to motorized trail use (OHV use, other motorized activity and motorized trail activity) and non-motorized trail use (horseback riding, biking and hiking) main activity participation estimates using the forest trip segment shares in order to quantify visitor spending attributable to motorized and non-motorized activities on the San Juan NF. This distinction is useful for the analysis of effects in order to address public concerns about local economic impacts.

Information gleaned from the Pre-NEPA workshops indicated that individuals often undertake a variety of types of recreation; accordingly types of activity can't be used to segregate groups of people. For example, a motorcycle rider might also mountain bike on a summer weekend and walk into hunting areas in the fall. Since the economic contribution analysis uses NVUM main activity participation these individuals are counted under multiple activity visits and their spending is characterized by the corresponding trip segment type of each of those distinct activity visits.

Table 3-42: Spending Profiles by Trip Segments for Average Spending Forests²⁵

Spending Category	Non-Local Segments			Local Segments			Non-Primary‡
	Day	Overnight on NF	Overnight off NF	Day	Overnight on NF	Overnight off NF	
Motel	\$0.00	\$33.54	\$151.77	\$0.00	\$5.36	\$33.84	\$114.86
Camping	\$0.00	\$26.81	\$18.85	\$0.00	\$23.63	\$17.11	\$11.95
Restaurant	\$15.30	\$26.31	\$111.34	\$5.19	\$6.78	\$33.99	\$88.62
Groceries	\$8.63	\$55.65	\$68.29	\$6.31	\$67.30	\$54.54	\$43.36
Gas and oil	\$23.16	\$52.67	\$71.17	\$12.83	\$37.57	\$40.18	\$48.40
Other transportation	\$0.58	\$1.83	\$3.98	\$0.13	\$0.49	\$1.09	\$3.26
Entry fees	\$4.56	\$8.93	\$18.39	\$2.17	\$3.76	\$6.86	\$11.11
Recreation and entertainment	\$4.34	\$7.70	\$27.13	\$1.50	\$3.50	\$5.67	\$16.71
Sporting goods	\$2.94	\$12.19	\$15.18	\$4.16	\$11.23	\$12.85	\$6.44
Souvenirs and other expenses	\$3.15	\$7.80	\$28.10	\$0.72	\$2.85	\$6.87	\$25.83
Total	\$62.65	\$233.44	\$514.20	\$33.02	\$162.48	\$212.99	\$370.54
Source: White, Goodding, and Stynes 2013							

²⁵ Dollar figures are expressed in 2012 dollars and represent the spending of the entire group on Forest Service lands and within 50 miles of the boundary of Forest Service lands during the trip. The spending figures depicted in this table are one of three sets of national-level spending averages developed from the NVUM data. The shown spending averages are those determined to be most-applicable to the selected forest based on statistical analysis. For more information see "Estimation of National Forest Visitor Spending Averages from National Visitor Use Monitoring: Round 2" by E.M. White, D. B. Goodding, and D. J. Stynes (2013), available online: http://www.fs.fed.us/pnw/pubs/pnw_gtr883.pdf.

Table 3-43. Annual San Juan NF Recreation Visits by Trip Segment²⁶

	Non-local Segments			Local Segments			Non-Primary ^c
	Day	Overnight on NF	Overnight off NF	Day	Overnight on NF	Overnight off NF	
Percent of National Forest Visits ²⁷	5	6	18	49	3	1	18

Source: White, Goodding, and Stynes, 2013

In total spending by recreationists on the forest supports approximately 518 jobs and about \$15.0 million in labor income in the five analysis area counties. On an annual average basis approximately 431 of these jobs and \$9.9 million of the labor income is supported in the Accommodation & Food Services, Arts, Entertainment, and Recreation, and Retail Trade sectors. Using the segment share information in Motorized Recreation (non-water based motorized activities- OHV use, other motorized activity and motorized trail activity) supports 26 of these jobs and \$888,140 in labor income while non-motorized recreation (horseback riding, biking and hiking) supports 230 of these jobs and \$7 million in labor income (IMPLAN 2013).

3.16.1.6 Values, Beliefs, Attitudes and Sense of Place

Values are “relatively general, yet enduring, conceptions of what is good or bad, right or wrong, desirable or undesirable.”

Beliefs are “judgments about what is true or false – judgments about what attributes are linked to a given object. Beliefs can also link actions to effects.”

Attitudes are “tendencies to react favorably or unfavorably to a situation, individual, object, or concept. They arise in part from a person’s values and beliefs regarding the attitude object” (Allen et al 2009).

Designation may affect nearby residents and visitors to the San Juan NF. Public comments received during the scoping process provide insight into the values, beliefs, and attitudes of stakeholders relative to the decision to be made. These comments reflect diverse opinions on the social and economic outcomes of various types of recreation and its management on the San Juan NF.

The contribution of use to local economic activity, and the potential for restrictions on access to decrease these economic contributions, was noted. Comments stated that the proposed action does not provide easy access to the Town of Rico by motorcycles which will lessen the amount of revenue from sale of fuel, food, and/or vacation rentals or hotel rooms for out of area riders. Commenters said

²⁶ The market segments shown here relate to the type of recreation trip taken. A recreation trip is defined as the duration of time beginning when the visitor left their home and ending when they got back to their home. “Non-local” trips are those where the individual(s) traveled greater than approximately 50 miles from home to the site visited. “Day” trips do not involve an overnight stay outside the home, “overnight on-forest” trips are those with an overnight stay outside the home on National Forest System (NFS) land, and “overnight off-forest” trips are those with an overnight stay outside the home off National Forest System land.

²⁷ A National Forest visit is defined as the entry of one person onto a national forest to participate in recreation activities for an unspecified period of time. A National Forest Visit can be composed of multiple Site Visits.

that restricting Rico access will “disincentivize” non-local riders to come to the Rico West Dolores area. Others stated “My Summer sales, as well as that of the other businesses in town, would be reduced by perhaps 15 to 20 percent” [owner Mine Shaft Inn]. In addition, concern about less access for riders that live in Rico was noted. Some commenters noted that the proposed action misses the opportunity to emphasize trails around Rico and the Rico West Dolores area; which could improve the local economy.

The relationship between hunting and motorized trail use was acknowledged in several comments: these comments noted the possibility that hunters would not visit Rico if motorized use [on trails] continues thereby causing economic impacts from a reduction in visitor use associated with over the counter tag sales. Others commented that decreases in availability of motorized access would cause similar economic impacts, stating that hunters would not visit Rico if motorized use was prohibited.

Values Beliefs and Attitudes inform sense of place along with information gleaned from the Pre-NEPA workshops where user groups and local communities were given an opportunity to present on what the trails mean to them and how their respective user groups make use of the trails. Individuals often undertake a variety of types of recreation; accordingly types of activity can’t be used to segregate groups of people. For example, a motorcycle rider might also mountain bike on a summer weekend and walk into hunting areas in the fall. Accordingly, the categories presented below are useful for evaluation of effects of the alternatives and are not representative of mutually exclusive groups of individuals.

3.16.1.6.1 Non-Motorized

Non-motorized users include Horseback riders, hikers/backpackers and mountain bikers. Pre-scoping workshops indicated that these groups use the forest to improve their physical, psychological and/or spiritual sense of wellbeing. Rico West Dolores provides miles of single track trails. Most trail enthusiasts prefer narrow trails; trails that require visitors to travel in single file provide a closer experience with nature. Trees and shrubs create a tunnel of green; flowers can reach eye level and wildlife cross the path. The experience just isn’t the same on wide roads or double-tracks even if they are closed to automobiles. Roads tend to push straight through, while single-track trails tend to wind around obstacles. Single track blends into the surrounding environment compared to roads.

Horseback riders noted that “few activities embody the West like a good old-fashioned horseback ride through Colorado’s prairies or mountain settings. Somehow, wildlife viewing, sightseeing and simply enjoying the outdoors are just a bit different when sitting astride a saddle.” Others noted “horses and horse use are historic here”. Their presence on the trails should be preserved for entire generations to come.” We have had some wonderful times riding on these trails with family and friends. We’ve taken friends out from other parts of the country, and always people are amazed at the beauty and pristine condition of the wilderness that we have here. We never cease to be amazed at the beauty of our local trails, and love to be able to ride out on them.”

Hikers and backpackers take short ½ day or less trips where locals travel from town for a morning or afternoon hike, or tourists stop for a ‘leg stretch’ of the Hwy 145 corridor. Tourists camping or staying in cabins along the Hwy 145 corridor might also take short hikes on the nearby Forest Service trails. Pre-scoping workshops indicated these users value quiet, solitude, the backcountry experience, a pristine natural environment and viewing wildlife. They acknowledged that their sense of place for the RWD area “is different from other areas in Dolores District because it is rugged and has extensive roadless areas with excellent wildlife habitat”.

Mountain bikers noted that they prefer this activity to hiking because they can cover more ground and see more nature this way. They acknowledged that the trails in the RWD are ‘diamonds’ for riding. Some are technically challenging. The views, forest, and terrain are spectacular here. The IMBA Managing Mountain Biking publication lists ‘what mountain bikers want’ and many of these values are provided in the RWD trail system. These include connection to nature, escape, fun, challenge, exercise, variety, connections and camaraderie. Trail running was not brought up as a popular activity in the RWD area in scoping or in the Pre-scoping workshops but trail runners seek nearly the same experiences as mountain bikers and their value in a sense of place overlaps.

3.16.1.6.2 Motorized

Nearly every user travels to the trailheads via some motorized vehicle; some people unload horses, others mountain bikes, some let out the dogs, some put on hiking boots, some get out the hunting gear, some bring the ATVs and some unload motorcycles. There are numerous motorcycle and other motorized users (ATV/UTV, etc.) from the local area and others that travel from outside the area. These users come to the RWD area for trail opportunities and to enjoy hunting, camping and other opportunities. Local users have been riding the RWD trails since the early 1960s.

Motorcycle riders value and appreciate RWD trails because “it’s a family friendly activity, the experience is shared with friends, the scenery is incredible, the air is clean, it’s emotionally and spiritually recharging, the terrain can be challenging, it’s a great workout and a day on the trail is nothing but pure fun”. ATV/UTV riding usually occurs in conjunction with other activities such as dispersed camping on a summer weekend or hunting. Local residents of Cortez, Dolores, and Dove Creek travel to the high elevation mountain settings of the RWD area when days are the hottest at the lower elevations. Sometimes large dispersed campsites are set up and families ride their ATV or UTVs on the Forest Roads. Values associated with ATV/UTV riding include: time with family, exploring the forest, enjoying nature, viewing wildlife, forest scenery and fun.

Hunters and dispersed campers use ATVs or UTVs for access, scouting on forest roads, or to access walk-in hunt areas. Many hunters will drive their ATV/UTV on the Forest roads to the end of the road, park and hunt within an unroaded block of land, and then return to the ATV/UTV to ride back to their campsite. Information from pre-scoping workshops indicated that their reasons for hunting include “for meat, to be with family and friends, for the sport and recreation and to be close to nature”. In addition, CPW has stated “The Rico West Dolores area is of high value for hunting, for people both in-state and out of state. Some hunters have been coming to the RWD area for years.” For some local families and out of town visitors, their vacations are spent dispersed camping in the RWD area. Many local families stay ‘close to home’ for vacations. They pull trailers, set up tents or RVs at their favorite spot and camp with multiple family members and friends for a few days or a week.

3.16.1.7 Environmental Justice

As noted above, residents of the analysis area counties experience varying degrees of economic insecurity compared to the state of Colorado. This is reflected in the poverty data (Table 3-44), which reveals that four of the five analysis area counties have a higher poverty rate than their states. In particular, residents of Montezuma County, CO and San Juan County, NM experience particularly high rates of poverty.

In addition, two analysis area counties, and the analysis area as a whole, have higher shares of minority residents than their states. In the analysis area and in San Juan County, NM 36.5 and 24.0 percent of the population identifies as American Indian (and non-Hispanic) as seen in Table 3-44.

Table 3-44. Environmental Justice Characteristics by County

Location	Share of individuals living above the poverty rate (ACS 2013 5-year Estimate)	Share Other than White Alone, Non-Hispanic (ACS 2013 5-year Estimate)	Share Hispanic or Latino (of any race) (ACS 2013 5-year Estimate)
Archuleta County, CO	9.7%	4.0%	18.0%
Dolores County, CO	14.9%	3.6%	4.5%
La Plata County, CO	11.4%	7.8%	12.1%
Montezuma County, CO	19.3%	13.8%	11.5%
San Juan County, NM	22.4%	39.0%	19.2%
Analysis Area	18.7%	26.5%	16.5%
Colorado	13.2%	9.5%	20.8%
New Mexico	20.4%	13.3%	46.7%

Source: U.S. Department of Commerce. 2015c

Given high rates of poverty and presence of minority populations in the analysis area, the environmental consequences analysis will address the potential for management actions to disproportionately and adversely affect minority and low-income individuals. Low-income individuals may be less able to adapt to changes in employment, income, and changes in access to personal use forest products and recreation opportunities on the San Juan NF.

As stated in the Forest Vegetation and Forest Products report, individuals and communities (such as members of the Navajo Nation and Ute Mountain Ute tribe) rely on wood burning stoves and/or fireplaces to heat their homes and the RWD area is an important sources of this fuelwood. These same communities also use the RWD area for gathering special forest products including mushrooms, teepee poles, fencing material, Christmas trees and boughs, seeds, pine cones and osha roots. Most of this personal use, traditional gathering and small-scale commercial harvesting is essentially “road-side” or limited to close proximity to system roads. Thus roads in the RWD area provide key access to these important forest products.

3.16.2 Effects of the Alternatives

3.16.2.1 Incomplete and Unavailable Information

Insufficient information exists to project changes in nonmotorized and motorized use that may result following implementation of the alternatives analyzed in this report. Such predictions would be highly speculative and would likely be minimized by regional and national population and recreation trends. Demand for substitute experiences on other public and private lands may also change however, insufficient information is available to be able to estimate the nature or magnitude of such shifts. Estimated economic contributions are calculated for existing use levels in the Affected Environment section above. The analysis of the impacts of the alternatives will focus on changes in opportunities and

the potential direction of change from the No Action Alternative, but not the size of economic impacts relative to these changes.

3.16.2.2 Alternative A – No Action

Non-motorized and Motorized

This alternative would continue current management, with no changes to route or trail management, and would thus not affect motorized or non-motorized use in the project area. This alternative would continue current management, with no changes to route or trail management, and would thus not affect motorized or non-motorized use in the project area. As a result, conditions and trends presented above, and resource indicators in **Error! Reference source not found.**, would not change.

Environmental Justice

While minority and low-income populations may exist in the area, Alternative A is not expected to have a disproportionately high and adverse human health or environmental effects on these communities. Impacts to local communities are not expected since this alternative would continue current management, with no changes to route or trail management, and would thus not affect use in the project area. In addition, impacts to subsistence uses are not anticipated under this alternative. As a result, conditions and trends presented above, and resource indicators in Table 3-57, would not change.

3.16.2.3 Alternative B –Proposed Action as Refined

The proposed action as refined would designate routes and areas for use on the San Juan NF. For example, changes to road and trail designations for motorcycle use, ATV/UTVs, setting limits on day-use and parking for dispersed camping and implements timing restrictions

Non-Motorized

This alternative would not change use designations on trails currently managed for nonmotorized uses. As described in the recreation setting section earlier in this DEIS, recreation settings are also similar to current settings. Some changes occur where motorcycle use is removed from the slopes above the Town of Rico and the lower 1/3 portion of the Bear Creek drainage. These changes, however, are not expected to increase local or nonlocal visitation to a large extent. Thus, economic activity and quality of life for non-motorized users is not expected to change from existing conditions.

Motorized

Under this alternative the ATV/UTV trail width would be increased from 50-inch limit to accommodate 62-inch vehicles. This provides trail riding experiences to UTV riders that are not available in Alternative A. In addition there are minor changes to the road system, however, the distribution and miles of road available for ATV/UTV riding is very similar to Alternative A. There is also a minor increase in ATV/UTV trail miles compared to Alternative A; since road riding is replaced with trail riding where roads are converted to ATV/UTV trails. In addition, this alternative proposes actions to limit cross-country riding at the headwaters of Fish Creek in wet areas such as boulders, split rail fence, or other barriers.

As stated in the ATV/UTV section of this DEIS, none of these changes are expected to cause ATV/UTV riders to abandon the RWD area. Some riders may experience short term displacement from their past

riding routes but the effect should be short-term as riders become accustomed to the new policy and as confusion about old policies becomes less over time. In addition, it is anticipated that ATV/UTV riders will continue visiting the RWD area for dispersed camping, and hunting. Over the counter tag sales may change slightly but any change is not expected to be enough to change overall trends in sales. No change is expected in the number of limited license tags or visitors. As a result economic activity and quality of life for ATV/UTV motorized users is not expected to change from existing conditions, under this alternative.

For motorcycle users this alternative provides loops, connections, scenery and trail experiences similar to Alternative A with some reductions. As stated in the Motorcycle Riding Opportunity section of this DEIS, seasonal restrictions under Alternative B may cause a few local riders to 'give up' riding in the Rico West Dolores area. As a result the direct and indirect effect on economic activity associated with local use may slightly decrease (see cumulative effects section for total effect discussion). Seasonal restrictions, under this alternative, are not expected to alter nonlocal motorcycle use because most out-of-town visitors arrive after July 1. Thus, economic activity and quality of life are not expected to change, relative to nonlocal motorized use.

Environmental Justice

Roads in the RWD area provide key access to these important forest products. As stated in the Forest Vegetation and Forest Products section of this DEIS "the removal of level-1 roads from the official system does have some potential negative impact on forest product harvesting." In addition, this alternative has the potential to change road status to decommissioned, and it would no longer be appropriate to encourage public motor vehicle use on those old roadbeds. While potentially adverse, it is not anticipated that these effects would be borne disproportionately by minority or low income populations.

This alternative would allow for the use of 62-inch wide UTVs on the existing Willow Divide ATV trail and the use of these larger machines should provide some additional capability to gather special forest products in these remote areas. Thus, these additional opportunities for forest product collection could benefit area environmental justice populations over current management under Alternative A.

As mentioned above seasonal restrictions could cause a decrease in local recreation visitation. However, economic activity is not expected to change since local users are likely to find substitute riding opportunities on or off of forest service lands. However, quality of life for motorcycle users could change if substitute opportunities are not commensurate with past opportunities in the RWD area.

3.16.2.4 Alternative C

This Alternative was developed to address issues related to motorcycle loops and connections, motorcycle access to the Town of Rico, emergency access from the Calico Ridge, concerns about the short motorcycle riding season, and ATV/UTV riding opportunities.

Non-Motorized

Alternative C includes adding motorcycles as a managed use to three trails that were previously managed as nonmotorized (Loading Pen, Tenderfoot and Spring Creek). This change could cause those seeking a semiprimitive nonmotorized setting to change their plans and move to a different trail. As described in the Nonmotorized Recreation sections earlier in this DEIS, no change in the levels of local or

nonlocal nonmotorized visitors is anticipated. Thus, economic activity for nonmotorized users is not expected to change from existing conditions. Quality of life factors are impacted with the addition of 3 motorized trails.

Motorized

Changes to ATV/UTV trail riding opportunities would be the same as characterized above under Alternative B. As a result, effects to economic activity and quality of life associated with ATV/UTV riders (and associated dispersed camping and hunting related opportunities) are the same as stated above for Alternative B: economic activity and quality of life for ATV/UTV motorized users is not expected to change from existing conditions, under this alternative.

Alternative C has less restrictive seasonal closures than Alternative B. Thus, the anticipated decrease in local motorcycle use experienced in Alternative B would not occur under this Alternative. As a result no change is expected for economic activity and quality of life associated with local motorcycle use. Similarly no change in economic activity and quality of life associated with nonlocal motorcycle use is expected.

Motorcycle riding connections are maintained or improved with new connecting trails from Burnett Creek to the Montelores Bridge and from Spring Creek to FR692.

Environmental Justice

Same as discussed above under Alternative B.

3.16.2.5 Alternative D

This alternative was developed to address issues in the Bear Creek draining relating to semiprimitive nonmotorized recreation experiences. Alternative D is the same as Alternative C except it would remove motorcycle riding within the Bear Creek drainage.

Non-Motorized

As discussed earlier in this DEIS, an increase in local and nonlocal nonmotorized recreation activity could occur under Alternatives D and E due to changing the Bear Creek drainage to a nonmotorized setting. It is impossible to measure the anticipated increase. Thus, economic activity associated with nonmotorized activity (employment and income effects to the analysis area) would increase above levels discussed in the existing conditions section above. In addition quality of life for non-motorized users could increase if recreation visitation and Values, beliefs, attitudes and sense of place were enhanced.

Motorized

Changes to ATV/UTV trail riding opportunities would be the same as characterized above under Alternative B. As a result, effects to economic activity and quality of life associated with ATV/UTV riders (and associated dispersed camping and hunting related opportunities) are the same as stated above for Alternative B: economic activity and quality of life for ATV/UTV motorized users is not expected to change from existing conditions, under this alternative.

Alternative D maintains motorcycle loops and connections for day and multi-day trips to a lesser degree than Alternatives A, B and C, but more than Alternative E. By making the Bear Creek drainage nonmotorized, motorcycle riders can't make the connection between the Mancos-Cortez area to the south and the RWD area however, there are still commensurate riding opportunities on FS in the two areas and commensurate substitute opportunities off FS (see cumulative effects section below). Regardless of the nonmotorized emphasis in the Bear Creek drainage (which is highly scenic), under this Alternative, the remaining trails provide many high elevation forest settings and the vistas from the Calico NRT and Bolam Pass are provided under this alternative. The quality of life factors for motorcycle riders is impacted, but not to the degree that they would be likely abandon the RWD area. Thus no change in economic activity nonlocal motorcycle use is expected because scenery and multi-day trip opportunities are available. In addition, changes to local use are not expected, under this alternative, due to seasonal restrictions. As a result no change is expected for economic activity and quality of life associated with local motorcycle use.

As mentioned above, the emphasis on the nonmotorized setting in the Bear Creek drainage could increase economic activity and quality of life for nonmotorized users. The nonmotorized setting would be enhanced but these increases are impossible to measure and would largely result if quality fisheries were maintained or enhanced.

As a result of the nonmotorized emphasis in the Bear Creek drainage motorcycle riders can't make the connection between the Mancos-Cortez area to the south and the RWD area however, there are still commensurate riding opportunities on FS in the two areas and commensurate substitute opportunities off FS. These include 1) choose a day's ride in the Mancos/Cortez area or 2) choose a day's ride in the Rico West Dolores area with connections to Hermosa to the east 3) ride licensed motorcycles on Highway 145 to go from Mancos/Cortez to Rico West Dolores area in the same day or 4) trailer between the two areas. These commensurate opportunities are key to the conclusion that no change in economic activity and quality of life associated with nonlocal motorcycle use is expected.

Environmental Justice

Same as discussed above under Alternative B.

3.16.2.6 Alternative E –

This alternative was developed to address issues related to semiprimitive nonmotorized recreation experiences by increasing the areas with nonmotorized single track trails.

Non-Motorized

The minor increase in local nonmotorized recreation activity, occurring under Alternative D, would also occur under Alternatives E due to changing the Bear Creek drainage to a nonmotorized setting. It is impossible to measure the anticipated increase. However, Alternative E would only experience slightly greater increase in nonlocal recreation visits, compared to Alternative D because the majority of non-motorized trails added (over Alternative D) do not contain the scenic draw or ease of access like other areas in this region. Thus, economic activity associated with nonmotorized activity (employment and income effects to the analysis area) would increase above levels discussed in the existing conditions section above. In addition quality of life for non-motorized users could increase if recreation visitation

and Values, beliefs, attitudes and sense of place were enhanced. These increases would be slightly higher than those experienced under Alternative D

Motorized

Alternative E has fewer ridgeline vistas compared to the other Alternatives. In addition this alternative removes loop connections making the quality of multi-day trips less considering users would have to cover the same ground twice. It is estimated that local riders would still make use of the Rico West Dolores trails under Alternative E. With the loss of ridgeline vistas and quality of multi-day ride opportunities, it is anticipated that nonlocal motorcycle use would decline under this alternative. As a result economic activity and quality of life associated with nonlocal motorcycle use would decline under this alternative. However, changes to local use are not expected, under this alternative, due to seasonal restrictions. As a result no change is expected for economic activity and quality of life associated with local motorcycle use.

As stated in the recreation specialist report “nonmotorized use is not expected to completely fill the gap left by nonlocal motorcycle use in this alternative”. The overall net decrease in nonlocal visits would decrease economic activity and quality of life under this alternative.

Effects to hunting and dispersed camping opportunities, related to motorized use, are the same as discussed under Alternative B.

As mentioned above, the emphasis on the nonmotorized settings in the Bear Creek drainage and other areas could increase economic activity and quality of life for nonmotorized users. The nonmotorized setting would be enhanced but these increases are impossible to measure.

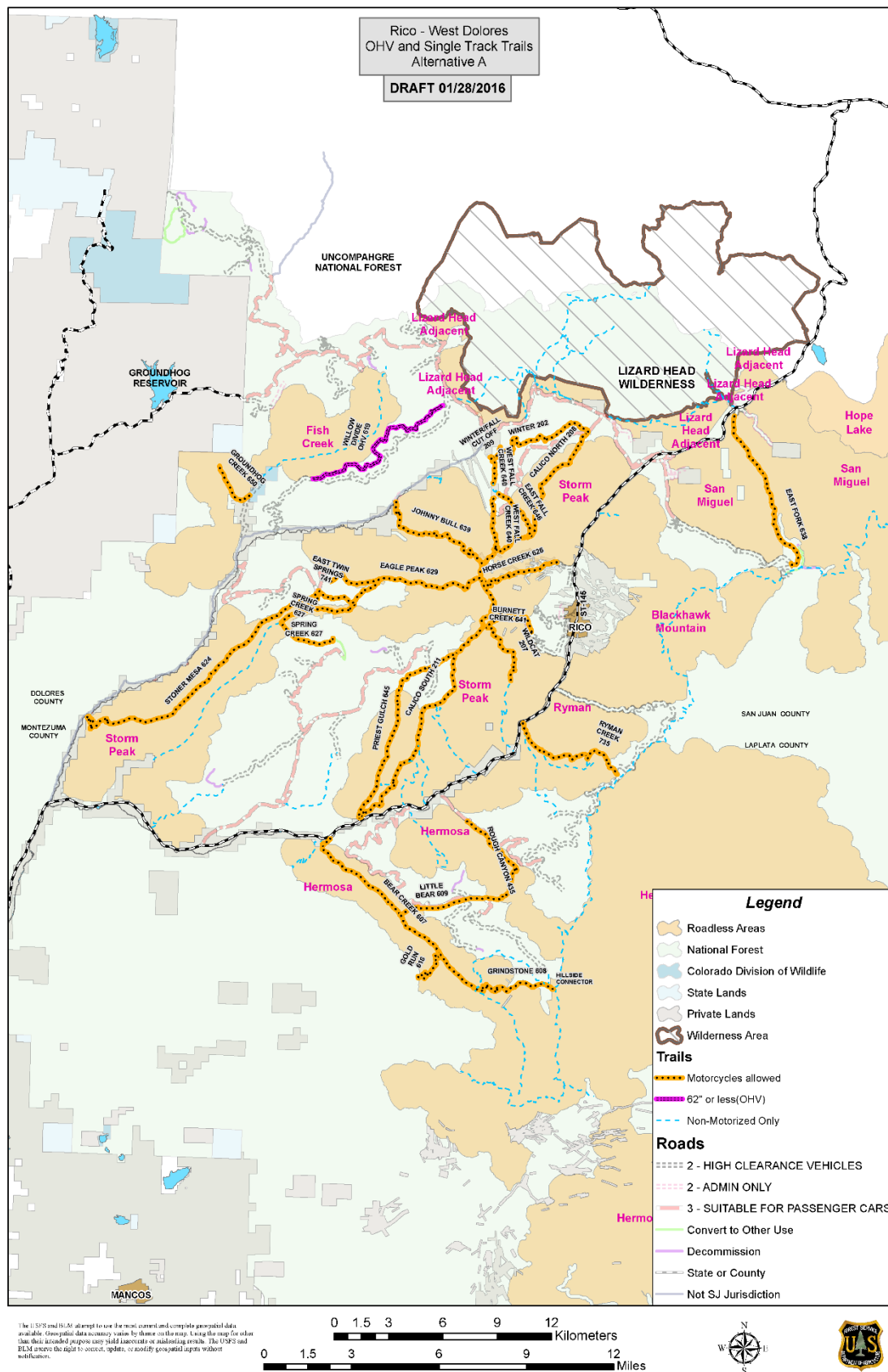
Environmental Justice

Same as discussed above under Alternative B.

3.17 COLORADO ROADLESS AREA CHARACTERISTICS

3.17.1 Affected Environment

There are 7 Colorado Roadless Areas that fall entirely or partially within the RWD landscape (Fish Creek, Storm Peak, Lizardhead Adjacent, Blackhawk Mountain, San Miguel, Ryman and Hermosa) . Activities within the roadless areas are primarily recreation and hunting. No OHV trails (ATV/UTV) are currently or proposed to be located in these areas. The miles of single track trails that include motorcycle riding along with other nonmotorized uses vary by alternative. The Final Rule can be found at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5378039.pdf



The following roadless area characteristics apply equally to upper tier and lower tier roadless areas. Upper tier has fewer exceptions for roads, linear corridors or tree cutting than lower tier but the desired roadless area characteristics are the same.

3.17.2 Effects of the Alternatives

No road construction is proposed in Colorado Roadless Areas under any alternative

Under Alternatives B, C, D or E tree cutting may occur for the purpose of constructing trail turnpikes on the northernmost 4 miles of the Calico NRT. In order to construct approximately 400 linear feet of turnpike, approximately 20-25 trees on site ranging in diameter between 8" – 16" would be cut. Both live and dead trees may be used but the preference will be towards recent standing dead. Trees will not be taken all from one location or in clumps. The trees will be harvested from dispersed locations adjacent to the project area.

In addition to the turnpike project, incidental tree cutting for trail maintenance may occur under all alternatives.

Roadless Area Characteristics: Resources or features that are often present in and characterize Colorado Roadless Areas, include:

(1) High quality or undisturbed soil, water, and air;

None of the RWD alternatives result in changes to air quality across the Colorado Roadless Areas. Soil and Water is addressed in the Watershed, Soils, Riparian and Water Quality section of this DEIS. Although localized impacts occur on single track trails within the roadless areas, these localized sites do not detract from the overall high quality soil and water characteristics. In addition,

- A portion of Spring Creek lies within a roadless area and Alternative B protects the outstanding water quality of this stream compared to Alternative C, D and E.
- Alternative B would include the most realignment and/or trail development to address wetland impacts on the North Calico NRT. Alternatives C and D would also take steps to realign the trail but to a lesser degree. All three alternatives would include trail reconstruction and developments designed to stabilize wetlands and provide for a sustainable trail tread. Alternative E is similar to C and D but would remove one user group (motorcycles) thus lessening the total amount recreation use on the trail. Regardless of the alternative chosen, temporary closures of the trail may be necessary prior to trail reconstruction to address wetland impacts.
- Alternatives B, C, D and E decommission a section of the Ryman trail located on the erosive Cutler formation soil type. These alternatives also remove motorcycles as a user group on this trail.

- A section of the East Fork trail that has limited use currently will be removed from maps and allowed to naturally decommission and re-vegetate thus removing recreation trail use from a fen/wetland complex.

(2) Sources of public drinking water;

Currently, the waters within the Rico-West Dolores Landscape meet water quality standards for sediment. All action alternatives would reduce the risk of sediment delivery to the stream network by reducing the route/stream intersections and by reducing the mileage of routes near to streams. In terms of the road network, there is no difference between action alternatives. Differences by motorized trails between the alternatives are displayed in table 10. It is important to note that in all the action alternatives there would still be a trail present but the user group would be changed. At the watershed scale, there would not be a measureable difference between action alternatives for sediment delivery to the stream network. Additionally, trail design and mitigation would be applicable to all action alternatives.

(3) Diversity of plant and animal communities;

Roads and trails do not result in changes to vegetation communities in that no forest structure or composition changes would occur. Weed species can detract from native plant diversity. Trails are vectors for weed spread and weed species have been noted on the single track trails within the roadless areas with the highest level of weeds located near trailheads. Weeds can be transported by mountain bike, hiker and horse riding activities as well as by motorcycles. Trails with motorcycles removed as an allowable use have one less type of use present to carry weed seeds. Weeds are likely to stay established and spread along single track trails, especially in the vicinity of trailheads.

(4) Habitat for threatened, endangered, proposed, candidate, and sensitive species, and for those species dependent on large, undisturbed areas of land;

The physical nature of habitat is not altered under any alternative because none of the alternatives propose vegetation treatments. At localized spots fens and riparian areas are altered by the presence of single track trails. Design features have been added that will be common to all the alternatives that will evaluate at address fens and wetlands impacted by trails within the roadless areas. Examples include the northernmost 5 miles of the Calico NRT where trail realignment, developments such as turnpikes and boardwalks would be implemented. Large spaces of land exist in the roadless areas outside of the trail corridors. A wildlife security area review shows spaces with functioning habitat for elk a big game species that requires undisturbed areas of land. Bear and mountain lion habitat is affected by adequate spaces are maintained under all the alternatives.

- Alternative E has the least motor vehicle noise disturbance with Alternative D next.
- Alternatives B and C are similar and result in less motor vehicle noise disturbance than A but more than D or E.
- Alternative A has the most miles of single track trail with motorcycle use of all the alternatives.

(5) Primitive, semi-primitive nonmotorized and semi-primitive motorized classes of dispersed recreation; All of the roadless areas fall within semiprimitive nonmotorized or semiprimitive motorized recreation settings. None of the road and trail alternatives would result in roaded natural settings. In addition,

- Alternative D expands semiprimitive nonmotorized settings in the Bear Creek drainage.
- Alternative E expands semiprimitive nonmotorized settings in the North Calico/Johnny Bull area, East Fork trail area and also includes the Bear Creek drainage.

(6) Reference landscapes;

The roadless areas within the RWD area serve as reference landscapes to some degree. Historical mining altered these areas prior to their establishment as inventoried roadless areas.

No change to vegetation structure, composition, or diversity would occur as a direct result of designating type of use on the single trails in these areas. A minor addition to the trail system includes the Sockrider trail, and the reconstruction of the upper section of the Tenderfoot trail in Alternative C. Wildlife disturbance from motorcycle use of single track trails is described in the Wildlife Habitat section of this DEIS. All alternatives continue to provide functioning wildlife security areas with habitat connectivity and refugia for species sensitive to human disturbance. The action alternatives expand the size of wildlife security areas with E creating the largest spaces, followed by D.

(7) Natural-appearing landscapes with high scenic quality;

The roadless areas remain naturally appearing landscapes with high scenic quality under all the alternatives. Evidence of historic mining is still present at some locations. Livestock graze portions of the roadless areas. Scenic vistas are not altered under any alternative. Trails continue to provide access or public enjoyment of scenic vistas.

(8) Traditional cultural properties and sacred sites; and

Historic and prehistoric features have been evaluated where they are known to occur in proximity to the single track trails currently located within the Colorado Roadless Areas. In addition, design features described in Appendix B outline additional survey and evaluation prior to implementation of trail decommissioning, realignment or new developments. No adverse effects to cultural resources are anticipated under any alternative.

(9) Other locally identified unique characteristics

No other locally identified unique characteristics are described in the San Juan Forest Plan for these roadless areas.

MAINTENANCE AND ADMINISTRATION

3.18 TRAIL MAINTENANCE FEASIBILITY

This analysis derived from staff knowledge of the RWD trails and FSH2309.18. GIS data was also used.

3.18.1 Affected Environment

3.18.1.1 Trail Fundamentals

As described in FSH2309.18 Chapter 10, trail fundamentals are five concepts that are the cornerstones of Forest Service trail management, including Trail Type, Trail Class, Managed Use, Designed Use, and Design Parameters. These fundamentals are applied based on the management intent in the applicable land management plan, travel management decisions, trail-specific decisions, and other related direction. The selected management intent may result in trail design parameters that may or may not reflect the current condition of the trail (explained further below).

The alternatives in Chapter 2 are described in terms of 'managed use' and 'designed use'. Managed Use indicates management intent to accommodate a specific use. There can be more than one managed use per trail or trail segment. Managed Use is usually a small subset of all the allowed uses on the trail. Designed use is the Managed Use of the trail that requires the most demanding design, construction and maintenance parameters. There is only one Designed Use designated per trail or trail segment. Although only one designed use can be designated, other uses can be accommodated. For example, a trail where 'Motorcycle' is identified as the designed use, could also include vegetation clearing to accommodate pack and saddle.

During implementation, District recreation staff will apply the management intent identified through this analysis and decision to develop the trail fundamentals (trail type, trail class, and design parameters) for each trail, in keeping with the guidelines described in FSH2309.18 Chapter 20. This in turn will guide on-the-ground trail reconstruction or maintenance actions for each trail.

Managed uses, designed use and the physical attributes of the environment through which the trail passes dictates the level of development needed to sustain trails. For example trails that cross wet meadows will generally need some form of elevated tread or hardening in order to sustain trail use across them and trails with steep grades will need to have trail drainage features in-stalled to reduce erosion.

Trail specifications will vary depending on the identified managed uses and designed use. For example trails that have 'motorcycle' as a managed use are typically identified as having a designed use of 'motorcycle' as well. These trails will typically favor the use of climbing turns over switchbacks, and the use of rolling grade dips over the use of water bars. They may also need hardened climbing turns. When a trail has multiple managed uses, design specifications associated with several types of trail use may be incorporated in order to effectively manage and maintain a trail segment. For example a trail that is managed for motorcycles, pack and saddle, bicycles and hiker/pedestrian may include clearing limits associated with pack and saddle design parameters in order to allow safe passage for stock. These same trails might also incorporate some tread width, grade, and surface design elements from design

parameters associated with bicycles. A combination of design parameters has been used in the past for trails in the RWD area.

The degree of challenge presented by a trail depends on a combination of trail characteristics, including trail grade, alignment, clearing width, tread conditions, gain or loss of elevation. Most of the trails in the RWD area are currently challenging because of a combination of these factors.

3.18.1.2 Infrastructure Development

Some trails in RWD landscape have a need for additional infrastructure development in order to sustain trail use. Installing this infrastructure is not generally part of routine maintenance but can be if the time taken to complete the work falls within the routine maintenance schedule. This type of work often includes developments necessary to provide for a stable trail surface across wet areas, and/or to provide drainage features needed to sustain trail use on steeper grades that are common in the RWD area. Infrastructure developments such as additional drainage features on steep slopes and stabilization of trail tread in wet areas are often necessary regardless of type of use.

One problem on trails in the RWD area is trenching and trail braiding through wet meadows, springs and seeps. Recently, turnpikes have been constructed on trails to address impacts to wetland areas. Examples include turnpikes constructed on the Navajo lake trail in 2014 (wilderness trail open to non-motorized uses only), the Rio Lado Trail in 2015 (a trail open to non-motorized uses only) and the Calico NRT in 2012 (trail open to motorcycle use). It is difficult to predict when a trail located in areas where saturated soils appear periodically will become a problem. The potential for problems is obvious in some locations, while other locations remain stable for many years.

Constructed features require more upfront investment followed by less long-term maintenance once the constructed feature is in place. For example, once a turnpike is constructed, hoofs, feet and wheels all travel above the wet ground on the turnpike. Drainage features constructed on steeper trail grades divert water regardless of the type of use and in the absence of use at all. It's important to note that the need for constructed features on steep slopes does not automatically equate to more environmental impact if the section of trail is not hydrologically connected to the stream network.

3.18.1.3 Routine Maintenance

Trails in the RWD area are generally on a 1-3 year routine maintenance schedule based on the amount of maintenance required to address the needs of a particular trail segment. Routine trail maintenance generally consists of clearing down trees, brushing the trail corridor to the prescribed clearing limits, cleaning all drainage features and culverts to ensure that they are draining properly and addressing any trail back slope sloughing and outside edge berming that could interfere with the function of a trail that is designed to out slope in order to shed water. Routine maintenance can also include taking measures to prevent trail braiding, widening trail sections and addressing trail trenching. Also, during the course of routine maintenance, constructed features such as boardwalks, turnpikes, switchbacks, climbing turns and retaining walls are inspected and repaired as needed, or identified for additional maintenance.

While there are some different design considerations for different types of trail use (see designed use discussion above), most routine trail maintenance is the same for trails that are managed for hiker/pedestrian, pack and saddle, mountain bikes and motorcycles. Tree clearing, trail corridor brushing, and maintenance of constructed features must occur regardless of type of use. It has been

staffs observation that factors such as amount of trail use, the soils in which the trail is located, trail grades, and alignment are the primary factors in determining how much routine maintenance a particular trail segment needs.

Currently trail damage in fens, wetlands, across streams, or wet meadows are a priority for trail maintenance. Where trail maintenance issues occur in these areas, actions to address the issue are prioritized over places that are not hydrologically connected.

Trail maintenance also responds to natural changes in the forest which could include large precipitation events, wildfires or insect or disease outbreaks. Forest health specialists have warned of the possibility of patches of dead trees, or expanses of dead trees if spruce beetle or other insects reach epidemic levels. It is unknown when or where outbreaks could occur but the result could be an increase in dead standing trees and deadfall along the trail system. This could result in increased maintenance costs to clear deadfall or remove hazard trees. Partnerships with groups that use the trails can be a helpful addition to getting this work done each year. If safety concerns arise from standing dead trees some trails may need to temporarily closed to public use.

3.18.1.3.1 Tread Issues

Trail trenching occurs to varying degrees on most native surface trails, and some degree of trenching should be expected. On trails open to motorcycle use the trenching forms a cupped trench as wide as a motorcycle tire, and on trails where horse use is predominate that cupped trail tends to conform to the gait of a horse. To a lesser degree this also occurs on mountain bike and hiking trails. Not all physical locations are as prone to cupping or trenching because of soil conditions (drier locations, rocky soils or numerous roots). Trail maintenance addresses trenching but the situation can re-appear between maintenance visits.

Some sections of trail with exposed rocks and tree roots exist currently, however many of these sections are not located in sensitive areas. Rocks and exposed roots may detract from user experience but are less of an environmental concern because they are not hydrologically connected. Design parameters include protrusions ranging from 3-12 inches and most trails fall somewhere within that range.

All types of use can cause trail braiding to occur if a foot, hoof, or wheel travels off the main tread to avoid obstacles, or a cupped trail tread. When braiding occurs in wet areas, horses tend to sink in further because of their weight, where motorcycles and to a lesser extent mountain bikes can spin wet dirt out of the trail tread. Hikers can sink in mud and create a compacted tread as well.

3.18.1.3.2 Downcutting

Downcutting or incising of the a trail occurs when the trail crosses soft soils with little rock content. This situation occurs currently on the Ryman trail.

3.18.1.3.3 Layout and Grades

Because these trails were developed from historical uses and not established through today's trail design parameters, there are segments of trail with steep grades. For example, the Calico NRT was previously a stock driveway used primarily for sheep grazing. Sections of the trail area located 'up the fall line' or along the ridgeline as opposed to below it. Other trails in the RWD area were developed similarly along historical pathways (the exact sources of many of these trails is unknown).

Currently, no segments on the Calico North (208) exceed the Short Pitch max grade recommended in FSH1909.18. Other trails are expected to be similar to this example. Therefore, throughout the RWD area, there are some segments slopes require extra drainage structures to control erosion. However, only the upper end of the Tenderfoot trail was identified as an issue where re-alignment to address grade was needed.

3.18.1.3.4 New Construction

Once the management intent for proposed new trails is identified, on-the-ground layout strives to meet the associated design parameters as described in 2309.19 Chapter 20, 2309.18_3.12b_ex.01-3.16a_ex.01 and incorporating the Design Features in Appendix B. This includes consideration for grades, cross-slope, and wetland areas. The special designation trails 62-inches in width would likely follow the ATV design parameters in the handbook. New construction is an added labor cost both in terms of the initial construction and then in terms of long term maintenance. .

3.18.1.4 Deferred Maintenance

When maintenance tasks cannot be completed during a regular maintenance cycle, or when constructed features such as turnpikes and additional drainage features cannot be installed, those tasks are considered to be deferred maintenance. The deferred maintenance backlog remains until funding is available to complete the work. Deferring needed maintenance can result in more intensive resource impacts, and problems that were easy to fix when they were small, become more difficult to fix when they grow larger over time.

The magnitude of resource issues that result from deferred maintenance depends on the location of the problem spot. See the soil and water report for a description of areas where trails are ‘connected’ to wet areas and where they are not, and a discussion of soils susceptible to down cutting. Annual Forest Service maintenance appropriations rarely provide enough funding to complete all scheduled routine maintenance and also address outstanding deferred maintenance projects. To fill in these funding gaps the Forest Service applies for and often receives routine maintenance, deferred maintenance and reconstruction grants through the Colorado State Trails Program. Funding sources for these types of grants are typically specific to either motorized or non-motorized trails with the state motorized grant program being particularly well-funded via the OHV registration program. As a result there is more available grant money for motorized trails and routine maintenance is deferred less often.

In addition, other trail partners have contributed to projects in the RWD area and would be expected to continue in the future. Examples are partnerships with Trout Unlimited for trail projects to improve fish passage, install road or trail barriers to prevent tracks through wetlands, or improve drainage structures on trails connected to streams or springs. Trail partners also include groups of recreationists that assist with trail clearing in the spring, or convene a group of people for a specific task such as repairing a boardwalk. Partners also assist with weed control.

3.18.2 Effects of the Alternatives

Refer to the tables in Chapter 2 for infrastructure developments by alternative.

3.18.2.1 Alternative A

Under this alternative the managed uses of trails does not change from the current condition. Trails that include motorcycle use currently (114 miles) also include managed uses of motorcycle, pack and

saddle, mountain bike and hiker/pedestrian. This alternative also includes 7 miles of Trails Open to Vehicles 50-inch or less.

Alternative A does not include realignments or additional developments so trail trenching and braiding in wet areas is expected to be highest in this alternative. Sections of trail with exposed rocks and tree roots that are not hydrologically connected would remain similar to current conditions. This may be more evident on trails where motorcycle wheels spin dirt away from the rocks, however the situation also occurs on steeper grades in rocky soil types on trails with no motorcycle use currently (examples exist in Lizardhead Wilderness).

This alternative requires the highest amount of trail maintenance because issues related to soils in which the trail is located, trail grades, and alignment are not addressed. The long-term maintenance burden is expected to be highest under this alternative.

3.18.2.2 Alternative B

Under this alternative, 84 miles of trail will include a managed use of motorcycle. These trails would also include managed uses of motorcycle, pack and saddle, mountain bike and hiker/pedestrian. This alternative includes 15 miles of Special Designation Open to Wheeled Motor Vehicles 62-inches or less. The 15 miles includes 8 miles of new 62-inch trail.

Fewer miles would be susceptible to downcutting because of changes proposed to the Ryman trail where the most problematic section of this trail would be decommissioned. The remaining section will no longer be affected by spinning motorcycle tires because motorcycles would not be a managed use on this trail. Trail work to accommodate nonmotorized uses will be necessary but the overall potential for downcutting will be less than Alternative A.

Trenching or braiding through wet areas may occur at a slower rate when motorcycles are removed, however, the potential for trenching or braiding is not eliminated because horse, mountain bike and hiking could continue to braid or trench trails through wet areas. Problems associated with trenching or trail braiding in wet areas are best resolved when a trail is realigned away from saturated soils or when infrastructures such as a turnpike or stream crossing structure are installed. Alternative B proposes new infrastructure on the northernmost 4 miles of the Calico NRT. Also as described in the design features in Appendix B, locations in proximity to fens, unverified fens, and riparian areas will be evaluated for realignment or trail developments under this alternative. Therefore the potential for braiding and trenching would be less than Alternative A.

Although timing restrictions on motor vehicle use of trails was developed to enhance wildlife habitat and reduce conflicts with hunters seeking a 'walk-in' experience, the timing restrictions would have the added benefit of reducing use of the trails when the trail treads are saturated with moisture. This reduces potential for trenching and braiding compared to Alternative A. It should be noted the potential is not eliminated because nonmotorized uses are not restricted.

The presence of sections of trail with steep grades will not change under any of the action alternatives because realignments solely related to grades are not proposed.

This alternative adds 8 miles of new 62-inch trail to the trail system. These new trails will occur primarily on ML1 roads or on ML2 roads that are changed to trail. In most cases, the ML1 road alignments meet

design parameters for ATV trails. Some sections will require improvements to the trail surface, and installation of drainage infrastructure.

This alternative would convert NFSR578B and B1 (in the Bolam Pass area) to single track to a trail managed for motorcycle use and other nonmotorized uses. This would be an expensive up front cost followed by a slight addition to overall maintenance because of a new trail.

Routine maintenance would be less than Alternative A. This alternative add 8 miles of 62-inch trail to the maintenance schedule, but also installs infrastructure, or decommissions section of trail, that will reduce maintenance needs in the long run. In addition to improved infrastructure, fewer miles of trail managed for motorcycles may result in a slightly lower maintenance demand because there would be one less user group on some of the trails.

3.18.2.3 Alternative C

Under this alternative, 100 miles of trail will include a managed use of motorcycle. These trails would also include managed uses of motorcycle, pack and saddle, mountain bike and hiker/pedestrian. This alternative also includes 20 miles of Special Designation Open to Vehicles 62-inches or less.

In addition to the new trail at Bolam Pass, this alternative includes two additional new trails, one connecting Burnett Road to the Rio-Grande Southern to Montelores Bridge, and the other connecting Spring Creek to NFSR692. This alternative also includes 13 miles of new 62-inch trail (5 more miles than Alternative B).

This alternative has the highest amount of infrastructure development of all the alternatives. In addition to trail developments on the northern-most 4 miles of the Calico NRT, and implementation of realignments or developments in areas of fens or unverified fens as described in the Design Feature of Appendix B, this alternative also includes trail developments on Spring Creek and Tenderfoot Trail. The 1.5 mile section of Spring Creek trail would require tread and drainage improvements, and the upper end of the Tenderfoot trail requires realignment and reconstruction. Loading Pen trail also adds motorcycle as a managed use in this alternative. All three of these trails may require a wider trail tread, and changes to the turning radius of switchbacks (climbing turns).

Maintenance needs are expected to be less than Alternative A, and more than Alternative B. Although this Alternative adds the most miles of new trail, the long term maintenance needs are estimated to be less than Alternative A because of the infrastructure and re-alignment actions in the northernmost 4 miles of the Calico NRT, near fens and wetlands, and decommissioning a section of the Ryman Trail. Short and long-term maintenance needs would be greater than Alternative B because of trail developments needed on the Spring Creek and Tenderfoot trails, and because of the additional 5 miles of 62-inch trail.

Timing restrictions lessen the potential for trenching or braiding similar to Alternative B. The earlier 'on-date' for riding could result in slightly less benefit than Alternative B.

3.18.2.4 Alternative D

Under this alternative, 88 miles of trail would include motorcycle as a managed use. These trails would also include managed uses of motorcycle, pack and saddle, mountain bike and hiker/pedestrian. This alternative also includes 15 miles of Special Designation Open to Motor Vehicles 62-inches or less.

New trail construction is the same as Alternative C for Spring Creek, Burnett Creek, Bolam Pass and same as Alternative B for new 62-inch trails (8 miles).

Long term maintenance needs are expected to be less than Alternative A and C, and more than Alternative B.

The long term maintenance needs are estimated to be less than Alternative A because of the infrastructure and re-alignment actions in the northernmost 4 miles of the Calico NRT, near fens and wetlands, and decommissioning a section of the Ryman Trail.

Maintenance needs are estimated to be less than Alternative C because trail developments described for Alternative C would not occur on the Tenderfoot trail and the miles of new 62-inch trail is 8 instead of 13. Fewer miles of trail managed for motorcycles may result in a lower maintenance demand because there would be one less user group on some of the trails.

Maintenance needs are estimated to be greater than Alternative B because of trail developments needed on the Spring Creek and Loading Pen trails.

Short term investments in trail developments are greater than B but less than C.

Timing restrictions are the same as Alt C.

3.18.2.5 Alternative E

Under this alternative, 65 miles of trail would include a managed use of motorcycle. This alternative also includes 15 miles under Special Designation Open to Motor Vehicles 62-inches or less.

Long term maintenance needs are estimated to be the least of all the alternatives. Short term investment in new construction and developments is similar to Alternative D.

New trail construction is the same as Alternative C for Spring Creek, Burnett Creek, Bolam Pass and same as Alternative B for new 62-inch trails (8 miles). Maintenance needs are estimated to be less than Alternative C and similar to Alternative D because trail developments would not occur on the Tenderfoot trail and the miles of new 62-inch trail is 8 instead of 13.

Trail developments and realignments associated with fens and wetlands would be similar to the other action alternatives except that motorcycles would be removed as a managed use from the northernmost 4 miles of the Calico NRT. Removing the spinning tire action of motorcycles from the northernmost 4 miles would reduce trenching and braiding compared to the other alternatives²⁸.

This alternative has the fewest miles of trail managed for motorcycles which would result in a lower maintenance demand because there would be one less user group on the trails. It is possible that some nonlocal motorcycle riders would discontinue their visits to the RWD area (see Motorcycle Opportunities section of this DEIS) which would further reduce overall use on the trails.

²⁸ Development and realignment would still be needed on the northernmost 4 miles of the Calico trail to accommodate pack and saddle, horse and hiker/pedestrian managed uses.

While some trails may see less maintenance due to funding sources being unavailable to perform work on those segments, the same trails would also likely see a reduction in the amount of use they receive requiring less maintenance to be performed.

Timing restrictions are the same as Alt. C.

3.18.3 Summary of Effects of Alternatives

	Alt A (No Action)	Alt B (Proposed Action)	Alt C	Alt D	Alt E
Amount of short term investments	Least	Greater than A Less than C or D	Most	Greater than B and Less than C	Same as D
Amount of long term maintenance	Most	Less than A	Less than A, greater than B or D	Greater than B but less than C also Less than A	Least
Progress towards design parameters related to managed use	Least progress	Progress is made towards design parameters in all action alternatives	Same as B	Same as B	Same as B

3.18.4 Cumulative Effects

No other foreseeable projects are known at this time that would add or remove miles of trail to the RWD trail system.

3.19 ADMINISTRATION AND ENFORCEMENT

3.19.1 Affected Environment

Currently administration and enforcement of road and trail designations occurs through signage, publication of Motor Vehicle Use Maps, some education brochures about trail conditions, visitor contacts at the office, visitor contacts in the field and law enforcement patrols. The FS partners with CPW Wildlife Managers and the County Sheriff's Departments for responding to violations of State or Federal regulations. Large acreages are covered by a relatively small number of personnel.

3.19.2 Effects of the Alternatives

Administration and enforcement is more effective when there are consistent rules that apply to all types of recreation use, or consistent rules that apply to multiple land areas such as the entire District or entire San Juan National Forest.

Seasonal restrictions add to the administration and enforcement burden. Alternatives B through E all propose additional timing restrictions on motorcycle or ATV/UTV trails compared to Alternative A. These timing restrictions require additional administration. However, timing restrictions on trails may also cause some areas to receive less illegal cross-country use while the restrictions are in place. Illegal cross-country travel is relatively low currently on single-track trails as most riders stay on the trails.

3.20 ROAD MAINTENANCE AND ADMINISTRATION

Information for this analysis included staff experience, data from INFRA, and Traffic count data.

3.20.1 Affected Environment

National Forest System Roads are managed through Road Management Objectives (RMO's). RMO's stipulate the maintenance criteria for; the uses for which the road was designed, the uses for which the road is currently managed (operational maintenance level), and the future intended management (objective maintenance levels). This EIS will guide the update of those documents for each road and how it will be maintained in this landscape.

3.20.1.1 Types of Maintenance

Each year the FS is responsible for maintain National Forest System Roads (NFSRs). Roads require various levels of maintenance and investment to stay functional. These levels are broken into those elements that are performed on an annual or continual basis, and those that are referred to as deferred maintenance. Annual or continual maintenance includes surface grading, ditch cleaning, culvert cleaning, dust abatement, gravel replacement, and roadside clearing. Elements of deferred maintenance are improvements to mitigate the impacts of a road to keep a road at its current operating level. Deferred maintenance generally involves longer lasting items such as replacement of gates, ditches, outlet ditches, resurfacing, hardening a surface, adding turnouts and realignment or widening of a road.

3.20.1.2 Gaps in Funding and Priorities for Maintenance

The Dolores District Travel Analysis Process (TAP) has established that deferred maintenance costs are not adequately being met by current appropriated funding levels (Appendix B – Dolores District Travel Analysis Report 2015). This report concludes “The appropriated funding is adequate to perform annual maintenance on many, but not all, roads on the District. The deferred maintenance costs are considerably higher than the appropriated funding. As a result, most of the deferred maintenance needs are not currently being addressed.”²⁹

Maintenance of ML3 and ML4 roads have been less affected because those roads have been prioritized to receive funding as follows,

- Beginning in 2013 the Chief of the Forest Service began shifting the emphasis of roads funding to maintaining and improving the passenger car road system and directed the roads program to reduce the amount of maintenance and reconstruction work completed on high clearance and closed roads in order to focus CMRD funds on maintaining the safety of, and mitigating environmental impacts, from the passenger car road system.

²⁹ Estimated actual costs as determined by the San Juan National Forest engineering staff.

- The Forest Plan has also prioritized where road maintenance funding will be applied in the guideline 2.13.17 “Perform maintenance activities annually on 75% of SJNF roads maintained for passenger vehicles (NFS maintenance level 3, 4, and 5 roads)”
- The FS has agreements with various counties whereby the counties assist (and receive reimbursement for) maintenance of some ML3 and 4 roads. This project would not change these agreements.

Another key tool in prioritizing work based on this direction is the San Juan Traffic count program. This program, which began in 2007 has provided Average Daily Traffic (ADT) counts for all maintenance level 3 - 5 roads (Arterial and Collector) in the RWD landscape. Table 3-62. Traffic Counts is organized to illustrate the Arterial and Collector roads in the RWD area based on descending ADT's. On average, ML 4 roads across the San Juan have an ADT of 199, and ML 3's average 102. Based on these numbers the RWD landscape traffic volume is significantly lower than the forest average. These traffic counts should be considered in the development of future maintenance prescriptions, priorities and management objectives in this landscape.

Table 3-45 Average Daily Traffic Counts for Arterial Roads

<i>Road Number -</i>	<i>Traffic Counts</i>		
Road Number	Name	Maintenance Level	Average Daily Traffic
NFSR 471	EAGLE CRK	3	NA
NFSR 535	WEST DOLORES	3	105
NFSR 533	GROUNDHOG	4	69
NFSR 611	BLACK MESA	3	52
NFSR 578	HERMOSA PARK	3	45
NFSR 545	TAYLOR CRK	3	40
NFSR 436	HILLSIDE DRIVE	3	39
NFSR 686	STONER MESA	3	37
NFSR 435	ROARING FORK	3	31
NFSR 534	LONE CONE	3	22

Regardless of the type of road, road maintenance activities have been priorities for 1) Emergency needs to prevent loss of life or injury to people, 2) Public safety needs prioritized by the amount of traffic loading and 3) Protection of natural resources. The purpose and need for this project includes taking steps to reduce road miles or maintenance levels in order to reduce maintenance needs.

3.20.1.3 Consideration of Previous Reports

The TAP report describes a general risk/benefit evaluation of the road system and makes recommendations for a minimum road system as defined in 36CFR212.5(b)(1) and (2). These recommendations were considered during development of the Proposed Action and alternatives described in this DEIS. Many of the recommendations from the TAP report were carried forward and additional changes were proposed. All the action alternatives result in a road system with fewer total miles than was initially recommended through the general risk/benefit evaluation. This is mostly due to proposals to convert some roads to trails.

3.20.1.4 Scope of This Analysis and Existing Conditions

Addressing the Purpose and Need for this project requires consideration of the available resources to maintain the roads and trails designated for motor vehicle use. In addition to designating roads open to motor vehicle use, this analysis also proposes the type of road that will be maintained, and identifies roads not designated for motor vehicle use including ML1 stored roads and roads used for administrative purposes only.

The Rico West Dolores Landscape Roads transportation system is current comprised of approximately 375 miles roads in maintenance level levels 1-4.

Generally, road maintenance has occurred annually on the existing 93 miles of ML3 roads and 4.5 miles of ML4 road. Road maintenance has occurred at relatively long intervals on the ML2 system with maintenance prioritized to emergency needs, safety and resource protection. Not all resource protection needs are addressed promptly. There are some places where ML2 roads are not draining properly.

The following roads have significant segments constructed across soil types identified as prone to mass movement; FR686 (Stoner Mesa), 545 (Taylor Creek), 535 (West Dolores), 578 (Hermosa Park also called Barlow Rd) and Hillside Drive (FR436). These roads require additional maintenance and reoccurring reconstruction efforts. Historically these road require reconstruction contracts of greater than \$100,000 to maintain passenger car access.

As stated above the RWD landscape traffic volume is significantly lower than the forest average.

3.20.2 Effects of Alternatives

The road system described in the action alternatives was developed through interdisciplinary evaluation. Demands, especially recreation, for roads in the RWD landscape are fairly high as the roads provide for ATV and UTV riding, Hunting, Forest Products gathering, and dispersed camping described in earlier sections of this DEIS. Forest Management needs are also addressed in earlier sections of this DEIS and include both arterial roads for hauling and stored roads for future vegetation management projects.

3.20.2.1 Roads Proposed to be Added to the System

The following road segments are proposed to change from ML1 to ML2. A preliminary risk/benefit rating is provided

Table 3-46 Preliminary Risk/Benefit rating for ML1 to ML2 roads

Road #	Name	Miles	Risk/Benefit
534E2	LONE CONE E2	0.68	High/Medium
534.F	LONE CONE F	1.05	High/Medium
727.E	WILLOW DIVIDE E	0.18	Low/High

The following road segments are proposed to be added to the road system as ML1, ML2 or ML3 roads. Many of these road spurs are proposed by the ID team after field review of dispersed camping impacts along the West Dolores Road and in proximity to the West Fork of the Dolores River. The spurs were proposed as a balance between completely eliminating parking for dispersed camping in these areas versus allowing access. However, many of these proposed road locations could result in added maintenance burden because they fall in wet areas prone to rutting and resource damage, or have poor alignments. Safety could be another concern if the roads fall within floodplains. Additional field checks prior to final decision will be accomplished to determine the location of floodplains. Adding these spurs to the system would progress away from and not towards Forest Plan guidelines to limit new roads in riparian areas. A preliminary risk/benefit rating is provided in the table below.

Table 3-47 Roads Segments Proposed to be added to the System with Preliminary Risk/Benefit rating

New Proposed Road Number	New Proposed Road Name	Mileages	Risk/Benefit
202	SIPHON SPRING	0.49	L/L
539.A	JOHNNY BULL TH A	0.33	M/L
206	TRESTLE	0.10	M/L
687	STONER DISPERSED	0.13	H/L
732	WILLOW DIVIDE TH	0.09	H/L
403.A	GROUNDHOG POINT A	0.11	M/L
535.B	WEST DOLORES B	0.13	H/L
687.A	STONER DISPERSED A	0.12	H/L
732.A	WILLOW DIVIDE TH A	0.09	H/L
206.A	TRESTLE A	0.09	M/L
611.B	BLACK MESA B	0.05	L/L

3.20.2.2 ML 1 Roads

Stored roads (ML1) were evaluated and described in the TAPR and at that time only 5.5 miles were recommended to be decommissioned. Additional field reviews and meetings between engineer and timber staff during analysis for this DEIS resulted in proposals to decommission 39.8 miles under all the action alternatives. The remaining 125 miles of ML1 roads would provide for future forest management projects.

3.20.2.3 Road System by Maintenance Level

The action alternatives would further reduce the minimum road system identified in the TAP Report. Table 3-62 describes the total road miles in each category for the range of alternatives in the Rico West

Dolores Landscape. The general make-up of the minimum road system does not differ across the action alternatives (Alternatives B, C, D and E). ML2 and ML3 roads would be designated Open to All Motor Vehicles. A mixed use analysis was performed and separate uses was not recommended. The table below includes 0.78 miles of unauthorized routes to be added to the road system as spur roads. A separate discussion of these proposals follows the table.

Table 3-48 Road Table

	Alt A (No Action)	Alts B, C, D & E	Remarks
Miles of ML 1 Roads** (Roads in storage and not open to public use)	169.16	125.5	Adding 3.39 miles from ML2, and 0.49 miles from unauthorized, Subtracting 39.8 miles to decommission, and 5.65 miles change to ML2-Admin and 1.99 miles change to ML2
Miles of ML 2 Roads (Roads open to public use and maintained for high clearance vehicle access)	108.32	99	Adding 1.99 miles from ML1, 4.41 miles from ML3, .78 miles from unauthorized, 6.66 miles decommissioned, 1.55 miles changed to ML2- Admin, 4.87 miles converted to OHV or single track trail, and 3.39 change to ML1
Miles of ML 3 Roads (Roads open to public use and maintained for passenger car access)	92.74	91.89	Adding 4.5 miles from ML4, .0.13 from unauthorized, 0.62 miles decommission, 0.45 miles convert to single track or OHV trail, 4.41 miles changed to ML2
Miles of Maintenance Level 4 Roads (Roads open to public use and maintained for passenger car access)	4.5	0	Subtracting 4.5 miles changed to ML3
Miles of Administrative Roads (Roads open to FS personnel or by authorization - not stored)	0	7.53	5.65 miles from ML1, 1.55 miles from ML2 and .33 miles from unauthorized
Total National Forest System Road Miles	374.72	323.92	
Total Road Miles Open to General Public Use	205.54	198.42	

**ML 1 roads that also serve as 62-inch trails while they are in storage are listed as ML1 in the roads table
Roads Converted to OHV or single track trail would no longer serve as roads for any purpose and are removed
from the road system

3.20.2.4 Road Maintenance Costs

The table below displays maintenance costs by Alternative.

The San Juan National Forest appropriated budget allocation for road maintenance and management of roads averaged \$1,054,000 from 2012-2015. The Dolores Ranger District has 1,139 miles (44 percent) of the 2,614 miles on the San Juan National Forest. Currently the Rico West Dolores Landscape is comprised of 405 (36 percent) road miles. The following is a brief comparison of the cost savings associated with the action alternatives vs. no action.

The TAP established annual maintenance cost per mile is for each maintenance level. The TAP discussed Engineers' annual Maintenance Cost per Mile and INFRA Cost per Mile. For the purpose of this report the Engineers' Cost will be used for annual maintenance and implementation costs. Table 3-63 – Annual Maintenance uses these TAP costs to give an approximate cost for the maintenance of the Rico West Dolores Landscape road per maintenance level and alternative. ML1 roads are \$12.00 per mile, ML2 roads are \$134.00 per mile, and ML3 roads are \$1,073 per mile and ML4 roads are \$1,200 per mile. Although the maintenance is the responsibility of the holder, FS engineers check administrative roads once every five years for any major problems. The costs shown in the table below do not represent a full maintenance cycle for every mile of road within the landscape, instead they reflect what the typical annual cost would be for maintenance of this group of roads. This is the result of amortizing the costs based on the recommended frequency prescribed in INFRA for the maintenance cycle of each mile of road. For example a maintenance level 2 road is maintained once every five years, the total cost for a maintenance cycle is 5,000, and the annual maintenance cost would be \$1,000.

Table 3-49 Road Maintenance Costs

	Alternative A (No Action)	Alternatives B, C, D & E
Cost of Maintenance Level 1 Roads (Maintenance Interval - once per 20 years)	\$2,030	\$1,506
Cost of Maintenance Level 2 Roads (Maintenance Interval - once per 5 years)	\$14,514	\$13,266
Cost of Maintenance Level 3 Roads (Maintenance Interval – Annual)	\$98,598	\$98,597
Cost of Maintenance Level 4 Roads (Maintenance Interval – Annual)	\$5,400	0
Cost of Administrative Roads (Maintenance Interval – Annual)	0	\$1,837
Total Annual Operational Maintenance Cost (Local)	\$120,542	\$115,206

Conclusion: The difference illustrated in Table 3-63 of \$5,336, if put to work on ML3 roads as program direction suggests, provides for the additional maintenance of 5 miles per year.

In addition to these annual cost savings deferred maintenance cost savings will also be recognized. The TAP used the INFRA deferred maintenance backlog values and averaged the cost per mile for each maintenance level. Using the same logic, the deferred maintenance for the action alternatives is \$9,122,750 where the no action alternative deferred maintenance is \$9,910,220 (as of January 2016) an estimated reduction of \$787,470.

Under Alternative A, the appropriated funding is adequate to perform annual maintenance on many, but not all, roads in the RWD area. This could result in longer maintenance intervals on ML2 roads and a continued backlog of deferred maintenance tasks. ML3 roads are prioritized for and would continue to receive annual maintenance. The target maintenance interval for ML2 roads is once every 5 years. Longer intervals could result in drainage issues or degraded quality of the road surfaces.

Under Alternatives B, C, D and E there would be more funding available to use for either 1) priority deferred maintenance tasks or 2) to decrease the maintenance interval on ML2 roads (more frequent maintenance visits to priority locations) or 3) respond to emergency situations such as slumps or slides. The balance between maintenance funding and maintenance demand is improved in the action alternatives but not fully addressed. Deferred maintenance would continue and not all ML2 roads would receive maintenance at target intervals.

3.20.2.5 Crosswalk between TAP recommendations and Alternatives

The table in Appendix D describes recommendations from the TAPR and how they were addressed in the proposed road system under Alternatives B-E. Where proposals in Alternatives B-E are different from recommendations in the TAPR the difference is explained in the remarks column in the table in Appendix D. In addition, text explains the differences from the TAP recommendations in detail in Appendix D.

3.20.2.6 Implementation Tasks

All tasks provided in this section are based on the physical actions, related to roads, necessary to implement what is described in the Alternative Descriptions by Area section in Chapter 2.

These tasks are in addition to the maintenance described earlier in this section. Where “Convert” is the action there will be no engineering costs. Roads converted to trails are listed in the Trails section of this DEIS. Signing costs are everyday occurrences regardless of projects.

Table 3-50 Road Implementation Tasks Other than Regular Maintenance

Implementation Tasks	Alt A	Alt B, C, D, E
Roads to be decommissioned with physical barriers (boulders)		X
Decommissioning in which alignments ripped, re-seeded, in addition to physical barriers		X
Decommissioning with signing only		X
Turnarounds*		X
Change ML2 to ML1** or ML2 to ML2-Admin.		X

Implementation Tasks	Alt A	Alt B, C, D, E
Add new spur (use unauthorized route alignment to add road to NFS system)***		X

* Where a turnaround is the proposed action work will require 1 day of dozer work, 1 day of backhoe work. If the turnaround is on a maintenance level 3 road 30 cubic yards of 3 inch minus base course and 30 cubic yards of ¾ inch minus surface course will be required.

**Changing ML2 to ML1 will require a closure device (usually a gate) and similarly changing an open ML2 to ML-Admin may also require a gate.

*** Where “Add new spur” is the proposed work will require dozer work for reconstructing the alignment.

3.21 POTENTIAL FOR CONFLICTS AMONG DIFFERENT CLASSES OF MOTOR VEHICLE USES

The only motor vehicle designated on single track trails is motorcycle, therefore no conflict between different classes of motor vehicle uses occurs on single track trails under any alternative.

OHV trails designed at a 62 inch width would be designated from ATV, UTV and motorcycle use. ATV and UTVs are the same class of vehicle. Motorcycle riders may use the 62 inch trails to complete loops or as connections. The 62 inch width allows motorcycles and ATVs or UTVs to pass each other. No conflicts are anticipated between motorcycle, ATV or UTV travel on the 62 inch trails under any alternative.

Engineering Reports for Mixed Use Analysis are located in the project file. Considerations in the studies included 1) Speed, volume, composition, and distribution of traffic on roads; and 2) compatibility of vehicle class with road geometry and road surfacing. The focus for motorized mixed use analysis was on ML3 and ML4 roadways where staff had identified that there may be some safety concerns. These roadways were main access routes. The Mixed Use Reports determined that the roads under review could be designated for motorized mixed use without increasing the safety risk to the public. No roads were identified where a mix of highway legal and non-highway legal use should be prohibited. As described in Design Features (Appendix B) actions identified in the mixed use reports would continue to be implemented. This may include “Share the Road” signs, “Not Recommended for Trailers” signs, reflective markers at curves, and/or brushing. Roads for which actions were identified are NFSR’s 435,436,496,533,534,535,545,547,578,611,686,692,and 727.

3.22 SAFETY

3.22.1 Roads

The Mixed Use Analysis described above addresses potential safety hazards from combined use of roads by licensed and un-licensed vehicles. Mixed use of different types of motor vehicles on roads was not identified as an issue for this analysis area.

Road maintenance funding, discussed above, provides for annual maintenance of ML3 roads. These roads are open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Warning signs and traffic control devices are provided to alert motorists of situations that may violate expectations. These roads are typically surfaced with aggregate but can be native surface. A combination of drainage dips and culverts provide drainage. Potholing or washboarding may occur. These roads are subject to the requirements of the Highway Safety Act. Maintenance guidelines include replacing the surface course, surface blading, cleaning ditches, cleaning/replacing culverts, cleaning/replacing cattleguards, controlling the vegetation to provide for sight distance, repairing/removing slides and slumps, installing/maintaining regulatory signs per the Manual on Uniform Traffic Control Devices (MUTCD), and installing/repairing seasonal closure gates.

Road maintenance funding could result in longer maintenance intervals on ML2 roads than the target once every five years. However, ML2 roads are not managed for passenger car traffic, and user comfort, and user convenience are not considerations. Warning signs and traffic control devices are not provided with the exception that some signing may be posted at intersections. Motorists should have no expectations of being alerted to potential hazards while driving these roads. Maintenance consists of maintaining the road prism for passage of high-clearance vehicles, maintaining drainage facilities, removing/repairing slides and slumps, brushing, and installing/repairing seasonal closure gates.

The District Ranger and Forest Supervisor have the ability to install closures on roads if needed to address emergency situations such as a slump or slide that creates a hazard. Such closures remain in place until such time as the road can be repaired.

3.22.2 Trails

Trail safety is provided through implementation of the design parameters described in the Trail Feasibility section above. Like roads, when hazards appear such as a slump or slide the District Ranger or Forest Supervisor can implement closures until the hazard can be addressed.

There are very few if any documented cases of safety issues from one user group interacting with another user group. To date, no law enforcement incident report has been found related to this type of safety concern. Signing trails helps alert recreationists to the types of use that may occur on the trails.

3.23 FOREST PLAN OVERGROUND TRAVEL SUITABILITY MAP

Overground motorized suitability is divided into three classes: 1) Unsuitable, 2) Suitable, and 3) Suitable Opportunity areas. Unsuitable areas include wilderness areas and other areas that are generally not conducive to road or motorized trail system development for resource, habitat, and/or constructability reasons. Suitable areas are those that have an existing developed road and/or motorized trail system that, for the most part, serves the recreation and resource access needs of the particular area. Suitable areas would not generally be considered for net overall expansion of the transportation system. Suitable Opportunity areas are those that have an existing road and/or motorized trail system, and where there is potential to improve the system by adding to the existing system of routes.

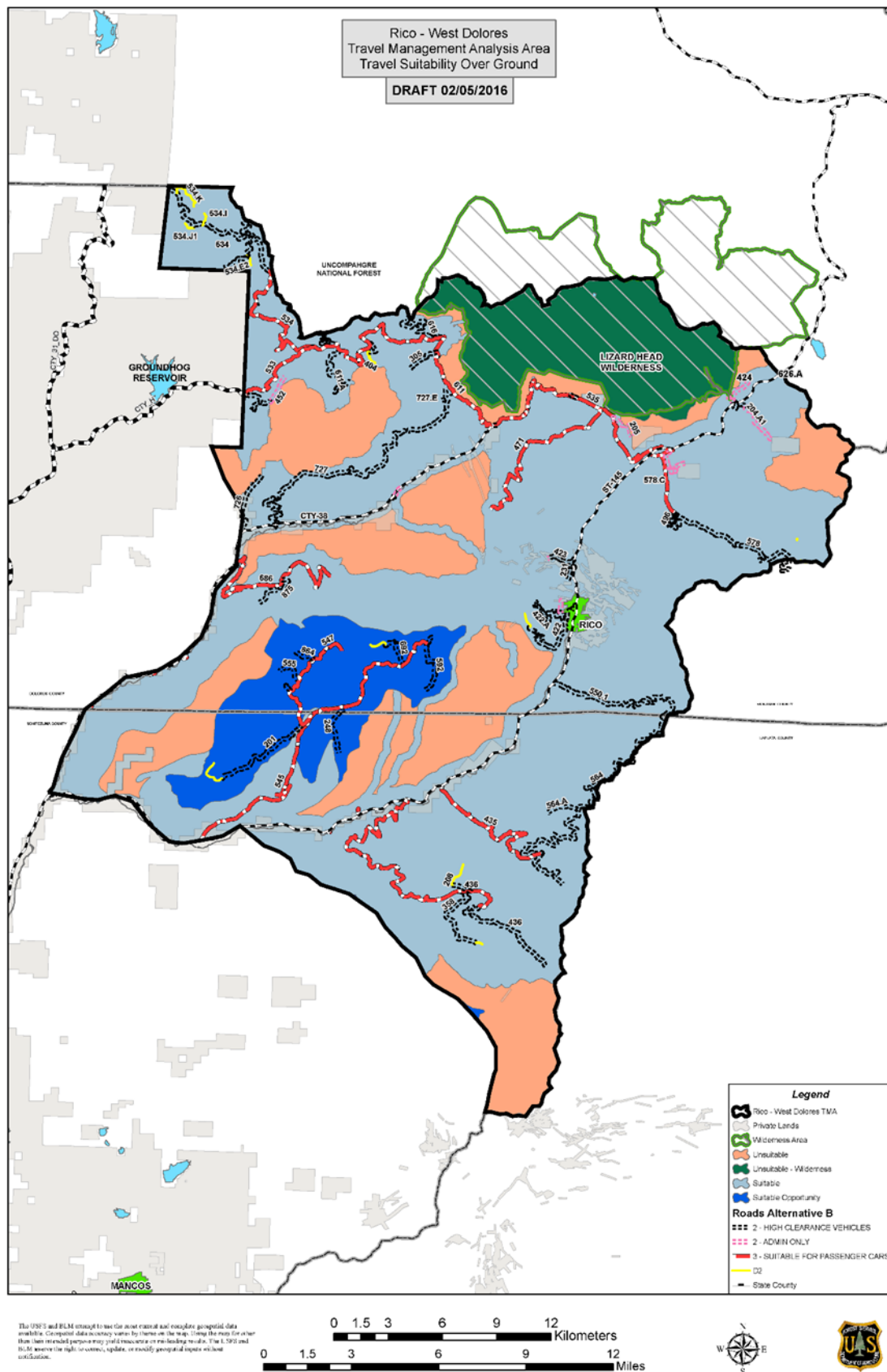
Changes to the existing system (such as to address resource concerns or enhance recreation experiences) are allowed within all area, including the elimination or decommissioning of roads and trails.

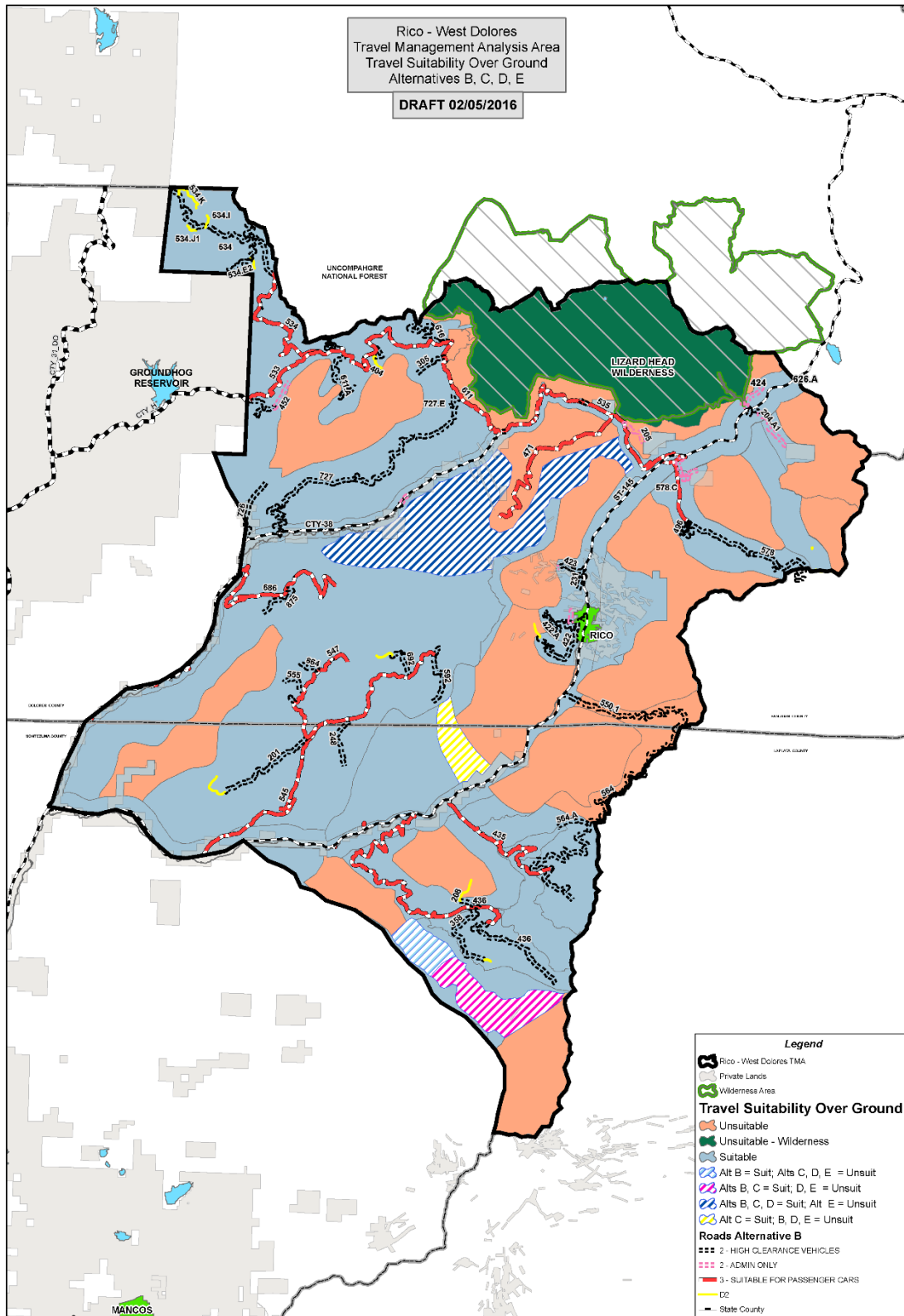
For the RWD area, the Forest Plan Overground Travel Suitability and OHV Area Designation Map primarily reflects current management and is subject to change through a plan amendment based on site-specific analysis.

Proposed changes to the Forest Plan Overground Suitability Map are shown in the Maps below. Based on this analysis the Taylor Mesa area should be reduced from an Opportunity Area to a Suitable Area because minor changes to the Taylor Mesa road and trail system might occur in the future, but major additions are not expected. The current configuration of roads and trails on Taylor Mesa supports forest management and recreation access. A major increase in route density is not desirable because of wildlife habitat and riparian/wetland features.

Proposed unsuitable polygons match the Semiprimitive Nonmotorized setting polygons in the proposed ROS map. These areas should not require road networks for forest management in the future. No Forest system roads cross these polygons currently. New trails are not anticipated in these areas in the future.

The map that follows displays the current Overground Travel Suitability and OHV Area Map for the RWD area followed by a second map that displays proposed changes under each Alternative.





The USFS and BLM attempt to use the most current and complete geospatial data available. Geospatial data accuracy varies by source on the map. Using the map for other than intended purposes may result in inaccurate or misleading results. The USFS and BLM reserve the right to correct, update, or modify geospatial inputs without notification.



DRAFT 02/05/2016

3.23.1 Irreversible And Irretrievable Commitments Of Resources

None of the alternatives considered in this document would result in irreversible or irretrievable commitments of the natural environment. The decisions determining which routes would remain open for public travel constitute a management commitment to the public regarding use of those routes into the future, but such management decisions can be amended, reversed, or changed. Planned or conceptual new routes are not approved under this travel decision; further project-specific environmental analysis and documentation is required before any planned new routes would be approved and implemented. Both the Forest Service and BLM travel management procedures and provisions have formal processes to effectuate change.

The physical scar on the landscape caused by a road or trail may endure for many years, even if the route is not to remain open for travel. There are actions that can be taken and natural processes that can help to erase those scars. Under existing conditions, the roads and trails being evaluated and considered to remain open have already been built and their imprint on the landscape is in place. But, it is possible that in the future any road or trail can be closed to travel and the imprint or scar of that route may be removed from the visual landscape through restoration, rehabilitation, or time.

The construction of new routes would have the potential to impact natural resources in such a manner that there would be loss of visual character and earth disturbing activities that would leave a long-term scar on the landscape. Such scars or physical evidence of earth disturbing activities could result in long-term changes, but they still would not necessarily be irreversible or irretrievable impacts.

3.23.2 Short-Term Uses And Long-Term Productivity

Roads and trails are typically not considered to be short-term uses. Constructed roads and trails are intended to be in place and functioning for many years. These roads and trails provide for access, commerce, and recreation and are desired facilities on federal lands needed by the public, business, and land managing agencies. A functional transportation system maintains long-term productivity of the federal lands in terms of public access and recreation. The actual presence of the road or trail on the ground does eliminate or impede other natural functions such as vegetative cover, infiltration, and soil productivity. These roads and trails also create a change to or a scar on the visual landscape. These alterations of the natural visual images are often considered long-term for humans but may actually be only a short-term change to the natural environment.

3.23.3 Unavoidable Adverse Effects

Closure of existing routes and restrictions on public travel deemed appropriate and necessary to protect the natural environment have an unavoidable adverse effects on those people who use roads and trails for the sole purpose of recreation. The alternatives continue to provide what is considered by the Forest Service to be adequate motorized access to federal lands. The roads and trails that would remain open provide the public with a reasonable transportation system that supports allowed commercial, private, and public activities.

4 CONSULTATION AND COORDINATION

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The following Forest Service Personnel were primarily responsible for preparation of this document.

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4.2 CONSULTATION

The Forest Service informed, consulted with or received input from the following State and Local Agencies, Tribes, Organizations or Individuals.

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Pueblo of Santa Ana
 Pueblo of Tesque
 Pueblo of Nambe
 The Hopi Tribe
 Pueblo of Zia
 Pueblo of Jemez
 Pueblo of San Felipe
 Pueblo of Pojoaque
 Jicarilla Apache Nation
 Ute Tribe of the Uintah & Ouray Reservation
 Beclabito Chapter
 Nenahnezad Chapter
 Teec Nos Pos Chapter
 Mexican Springs Chapter
 Huerfano Chapter
 Upper Fruitland Chapter

Crownpoint Chapter/Tsin Ya Nai Kidi
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 Tribal Historic Preservation
 Tribal Historic Preservation
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Others:

Various interested individuals
 Various livestock permittees
 Various permitted outfitters
 Various Organizations

4.3 DISTRIBUTION OF THE DEIS

The following agencies, organizations, and individuals were sent a copy or notified of the availability of the DEIS; the list includes those who specifically requested a copy of this document or who provided input during the development of this DEIS. The DEIS may be obtained on-line at

<http://www.fs.usda.gov/project/?project=44918>

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Austin	Candi & Mark	
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Ballard	Tork	Forest Access for All

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Cain	Ian	
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Candelaria	Bonnie	
Cardwell	Sheryl & David	
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Caringer	Duane	
Carmack	Jon	San Juan Trail Riders
Carver	Jill	
Carver	Jill	
Carver	Larry	
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Chapell	Glen	
Chapman	Jason	
Christiansen	Mark	
Christy	Allen	
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Endres	Jason	
England	Mike	Town of Rico
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Everette	John	
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Gass	Gary	
Gates	Robert	
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Liebetrau	Lloyd	
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Livingston	Skip	
Lloyd	Levi	
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Mallette	David	
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Marion	Robert	Backcountry Hunters & Anglers
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Menzies	Kyle	
Miles	Steve	
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Oliver	Becky	
Overn	Karen	
Page	Micah	
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Parkinson	Dan	
Parkinson	Laurie	
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Pearson	John	
Pearson	Mark	
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Peterson	Dan	
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Sharp	James	
Shultz	Marty	
Simpson	Casey	
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Smith	Cory	
Smith	Ryan	
Smith	Dale	
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Sturdevant	Ralph	
Supino	Phillip	
Sykes	Tom	
Sykes	Tom	
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Tate	Landon	
Teal	Louise	
Thacker	Jon	
Thomas	Tom	
Thorpe	Matt	CPW
Tompkins	Joseph	
Toms	Mitchell	
Trujillo	Luke	
Turner	Gary & Marylyn	Mountain Fuel and Market
Tuttle	Mark & Karen	

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Van Matre	Braden	AMA
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Watson	Adrian	
Welty	Harold	
Werkmeister	Mark	NM OHV Alliance
Willard	Scott	
Williams	Jimmy	
Willis	Thomas	
Witkowski	Stan	
Wolder	Brad	
Wren	Diane	
Wyman	Mac	
Wysopal	Cathy & George	

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USDA San Juan National Forest GIS Data Layers – dates vary

1. Range improvements – fences, developed springs, reservoirs, dams, etc...-
2. Recreation sites – campgrounds, trailheads,
3. Stream courses – NRIS and NHD – this layer will help see the proximity of the road to streams.
4. Electric transmission lines, Telecom lines
5. Contours - background only
6. Fens – Fens are a special kind of wetland that the FS has mapped out
7. Timber suitability –.
8. Forest Types – aspen, spruce fir, ponderosa pine ect.
9. Riparian areas
10. Natural Heritage Data –rare plants.
11. Invasive plants – where surveys occurred, the survey data table can be pulled up to show the species and when treatments occurred.
12. Soils – this is a detailed layer
13. HU6 watersheds – a common watershed boundary used in planning
14. Colorado Roadless Area Boundaries
15. Surface ownership – shows private and state lands
16. CPW Elk habitat layers – at
<http://www.arcgis.com/home/item.html?id=804abf2794b346828eeff285bffe9259>
 - a. Highway Crossing:
 - b. Limited Use Area:
 - c. Migration Corridors:
 - d. Overall Range:

- e. Production Area:
 - f. Resident Population
 - g. Severe Winter:
 - h. Summer Concentration:
 - i. Summer Range:
 - j. Winter Concentration:
 - k. Winter Range:
17. DMR_area_lynx_concentration

Glossary

affected environment: A physical, biological, social, and economic environment within which human activity is proposed. The natural, physical, and human-related environment that is sensitive to changes from the alternatives.

alternative: A choice of two or more things. For National Environmental Policy Act purposes, alternatives to the Proposed Action must be examined in the planning process. The discussion of alternatives must define the issues and provide a clear basis for choice by the decision-maker and the public (40 CFR 1502.14).

analysis area: The geographic area defining the scope of analysis for the project. Sometimes for a particular resource, the analysis area may have to be larger when effects have potential to extend beyond the boundaries of the proposal. May also be referred to as the “planning area.”

anthropogenic influences: Relating to or resulting from the influence that humans have on the natural world or environment.

best available science: Peer-reviewed and other quality-controlled literature, studies, or reports related to planning or project issues.

best management practices (BMPs): Methods, measures, or practices to prevent or reduce water pollution including, but not limited to, structural and non-structural controls, operation and maintenance procedures, other requirements, scheduling, and distribution of activities. Usually, BMPs are selected on the basis of site-specific conditions that reflect natural background conditions and political, economic, and technical feasibility.

big game: Those species of large mammals normally managed as a sport hunting resource. Generally includes elk, moose, white-tailed deer, mule deer, mountain goat, bighorn sheep, black bear, and mountain lion.

Biological Assessment (BA): An evaluation conducted for federal projects requiring an environmental statement in accordance with legal requirements under Section 7 of the Endangered Species Act (16 USC 1536(c)). The purpose of the assessment is to determine whether the Proposed Action is likely to affect any endangered or threatened species. Often written together with the biological evaluation.

Biological Evaluation: A documented U.S. Forest Service review of U.S. Forest Service programs or activities in sufficient detail to determine how an action or proposed action may affect any threatened, endangered, proposed, or sensitive species (FSM 2670.5). Objectives of the Biological Evaluation are to ensure that U.S. Forest Service actions do not contribute to loss of viability of any native or desired non-native plant or animal species (including threatened, endangered, proposed, or sensitive plant and animal species) or contribute to trends toward federal listing of any species, and to comply with the requirements of the Endangered Species Act that actions of federal agencies not jeopardize or adversely modify critical habitat of federally listed species (Forest Service Manual – Region 2 Supplement 2672.41).

climate: The composite or generally prevailing weather conditions of a region throughout the year, averaged over a series of years.

Council on Environmental Quality: An advisory council to the President of the United States established by the National Environmental Policy Act. It reviews federal programs to analyze and interpret environmental trends and information.

cover: Vegetation used by wildlife for protection from predators, breeding, and rearing of young (hiding cover) or to ameliorate conditions of weather (thermal cover).

criteria: Data and information that are used to examine or establish the relative degrees of desirability among alternatives or the degree to which a course of action meets an intended objective.

cumulative impacts: Combined impacts of the past, present, and reasonably foreseeable future actions. For example, the impacts of a proposed timber sale and the development of a mine together result in cumulative impacts.

designated roads and trails: Specific roads and trails identified by the land management agency where motorized vehicle use is authorized. Road and trail designations include the types of vehicles authorized to operate on a specific route and may also include a time of year (season) when motorized use is allowed.

direct impacts (direct effects): Impacts that are caused by the action and occur at the same time and place.

dispersed recreation: Outdoor recreation in which visitors are diffused over relatively large areas. Where facilities or developments are provided, they are more for access and protection of the environment than for the comfort or convenience of the people.

elk security areas: Habitat that allows elk to remain in a defined area despite an increase in stress or disturbance associated with the hunting season or other human activities (Lyon and Christensen 1992).

environmental analysis: An analysis of alternative actions and their predictable environmental effects, including physical, biological, economic, and social consequences and their interactions; short- and long-term effects; and direct, indirect, and cumulative effects.

environmental impact statement (EIS): A detailed written statement as required by Section 12(2)(C) of the National Environmental Policy Act (40 CFR 1508.11). An analytical document prepared under the National Environmental Policy Act that portrays potential impacts to the human environment of a Proposed Action and its possible alternatives. An EIS is developed for use by decision makers to weigh the environmental consequences of a potential decision.

ephemeral streams: Streams that flow only as a direct response to rainfall or snowmelt events. They have no base flow.

erodible soils: Soils that are highly susceptible to detachment and movement when disturbed

erosion: Detachment or movement of soil or rock fragments by water, wind, ice, or gravity. Accelerated erosion is much more rapid than normal, natural, or geologic erosion, primarily as a result of the influence of activities of people, animals, or natural catastrophes.

fens: Groundwater-fed wetlands that support high biodiversity and unique plant communities. Soil in a fen is saturated with water. Saturation creates low-oxygen conditions that slow down decomposition and promotes the accumulation of organic peat over time.

fish habitat: The place where a population of fish species lives and its surroundings; includes the provision of life requirements such as food and cover.

fishery: The total population of fish in a stream or body of water and the physical, chemical, and biological factors affecting that population.

floodplain: The lowland and relatively flat areas adjoining inland and coastal waters, including, at a minimum, that area subject to a 1% or greater chance of flooding in any given year.

forage: Plant material that is available for animal consumption.

forest cover type: A descriptive classification of forest land based on the present vegetative species composition and/or locality (i.e., lodgepole pine, mixed conifer).

forest road or trail: A road or trail wholly or partly within or adjacent to and serving the National Forest System and that is necessary for the protection, administration and utilization of the National Forest System and the use and development of its resources.

forest transportation system: The system of roads, trails, and airfields on National Forest System lands.

fragmentation: Process by which habitats are increasingly subdivided into smaller units, resulting in their increased insularity, as well as losses of total habitat area.

grade: A slope states as so many feet per mile or as feet/feet (%).

habitat: An environment that meets a specific set of physical, biological, temporal or spatial characteristics that satisfy the requirements of a plant or animal species or group of species for part or all of their life cycle. The sum total of environmental conditions of a specific place occupied by a wildlife species or a population of such species.

habitat connectivity: Habitat arrangements that allow organisms to move freely across the landscape.

habitat structural stages: Any of several developmental stages of tree stands described in terms of tree size and the extent of canopy closure they create (Wills 1987).

habitat type: An aggregation of all land areas potentially capable of producing similar plant communities at climax.

hiding cover: Vegetation, primarily trees, capable of hiding 90% of a standing adult animal from the view of a human at a distance of 200 feet or less.

Interdisciplinary Team: A group of resource professionals with different expertise that collaborate to develop and evaluate resource management decisions.

intermittent stream: A stream that flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow. During the dry season and throughout minor drought periods, these streams will not exhibit flow. Geomorphological characteristics are not well defined and are often inconspicuous. In the absence of external limiting factors (pollution, thermal modifications, etc.), biology is scarce and adapted to the wet and dry conditions of the fluctuating water level.

invasive species: A non-native to the ecosystem under consideration, and its introduction causes, or is likely to cause, economic or environmental harm or harm to human health (Executive Order 13112).

irretrievable impact: Commitment of a resource would be considered “irretrievable” when the project would directly eliminate the resource, its productivity, and/or its utility for the life of the project.

irreversible impact: The commitment of a resource would be “irreversible” if the project started a “process” (chemical, biological, and/or physical) that could not be stopped. As a result, the resource or its productivity, and/or its utility would be consumed, committed, or lost forever.

key habitat: Specific areas within the geographic area occupied by a species in which are found those physical and biological features 1) essential to the conservation of the species and 2) that may require special management considerations or protection.

lands generally suited for timber harvest: Lands where timber production is compatible with the attainment of desired conditions and objectives established by the Land and Resource Management Plan, and other lands where salvage sales or other timber harvest is necessary for multi-purpose objectives other than timber production.

linkage area: An area that provides connectivity between blocks of habitat. Linkage areas occur both within and between geographic areas, where basins, valleys, or agricultural lands separate blocks of habitat, or where habitat naturally narrows between blocks.

maintenance level: Maintenance levels define the level of service provided by, and maintenance required for, a specific road. There are five maintenance levels that are described as follows:

- **Level 1** - Assigned to intermittent service roads during the time they are closed to vehicular traffic. Closures must be for 1 or more years. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level and to perpetuate the road to facilitate future management activities.
- **Level 2** - Assigned to roads open for use by high clearance vehicles. Roads in this maintenance level are low speed, single lane and native surface.

- **Level 3** - Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material.
- **Level 4** - Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated.
- **Level 5** - Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated.

management indicator species (MIS): A species of wildlife, fish, or plant whose health and vigor are believed to accurately reflect the health and vigor of other species having similar habitat and protection needs to those of the selected indicator species.

mitigation measure: Actions taken to reduce or eliminate effects (impacts) from management actions, including 1) avoiding the impact altogether by not taking certain action or parts of an action; 2) minimizing impacts by limiting the degree or magnitude of the action and its implementation; 3) rectifying the impacts by repairing, rehabilitating, or restoring the affected environment; 4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and 5) compensating for the impact by replacing or providing substitute resources or environments (40 CFR 1508.20).

motor vehicle use map: A map reflecting designated roads, trails, and areas on an administrative unit or a Ranger District of the National Forest System.

motorized wheeled vehicle: Includes all types of motorized wheeled vehicles capable of or designed for travel on or immediately over land or other natural terrain (motorcycles, four-wheel drive vehicles, all-terrain vehicles, sport utility vehicles, pickup trucks, etc.) and includes those vehicles that have the driving wheels moving inside endless tracks or capable of conversion to such method of travel.

naturalness: Refers to an area that “generally appears to have been affected primarily by the forces of nature, with, the imprint of man’s work substantially unnoticeable” (Section 2[c] of the Wilderness Act of 1964).

noxious weeds: Plants designated as noxious by the Secretary of Agriculture or by the responsible state official. They are usually an invasive species. They generally possess one or more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, non-native, new, or not common to the United States. According to the Federal Noxious Weed Act (Public Law 93-639), a noxious weed is one that causes disease or has other adverse effects on people or their environment and therefore is detrimental to the agriculture and commerce of the United States and to the public health.

off-highway vehicle (OHV): Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain.

outstanding waters: An outstanding waters designation offers the highest level of water quality protection available under the Clean Water Act and Colorado regulations. This designation is designed to prevent any degradation from existing conditions.

perennial stream: Perennial streams carry flowing water continuously throughout the year, regardless of weather conditions. They exhibit well-defined geomorphological characteristics and in the absence of pollution, thermal modifications, or other human-made disturbances have the ability to support aquatic life. During hydrological drought conditions, the flow may be impaired.

protected areas: Large, mostly unaltered, undeveloped, and unroaded lands dedicated to the protection and maintenance of biological diversity (International Union for Conservation of Nature 1994).

Recreation Opportunity Spectrum (ROS): The ROS offers a framework to establish the desired setting conditions of access, remoteness, naturalness, built environment, social encounters, visitor impacts, and management for all areas of the San Juan National Forest and Tres Rios Field Office. These conditions are shown on the Established ROS Settings Map.

- Projects and activities shall be consistent with the established ROS settings. Because this map shows broad desired setting conditions for the entire planning area, site-specific analysis is generally necessary to further refine desired setting conditions that may apply to site specific projects.
- Pristine areas provide outstanding opportunity for solitude, natural quiet, and isolation; sights and sounds of development do not intrude on the experience. Lands are managed to protect and perpetuate their pristine conditions. Encounters with others are rare. All travel is crosscountry. There is no lasting evidence of camping activity, social trails, or other human impacts. Indirect methods of accomplishing management objectives predominate.
- Primitive areas are an essentially unmodified natural environment. These areas offer a moderate degree of solitude and natural quiet, and are managed to allow natural ecological change to occur uninterrupted. Human influence on vegetation is minimal. There may be evidence of campsites. Campsites are dispersed; usually one will not hear or see visitors at adjacent campsites. Maintained trails exist and user-established trails are evident. Evidence of management is minor.
- Semi-primitive areas are managed to protect the natural environment and provide access to primitive or pristine areas. Encounters with other users may be frequent in some concentrated use areas. Constructed and maintained trails support access to popular destinations. Use is often heavily concentrated day use; however, overnight camping occurs. Management emphasizes sustaining and protecting natural conditions. Management actions to mitigate visitor use impacts may be noticeable. Human use and activities within the area may be evident.
 - Semi-primitive non-motorized non-wilderness backcountry areas are characterized by a quiet, predominantly natural-appearing environment. Resource modification and utilization practices are not evident. Recreation opportunities are primarily those that provide opportunities for self-reliance and challenge. Concentrations of users are low.

Common recreation activities include hiking, mountain biking, hunting, fishing, backpacking, and camping.

- Semi-primitive motorized landscapes are similar in naturalness to semi-primitive nonmotorized landscapes with motorized travel. Travel is over designated trails or highclearance, four-wheel drive roads. Roads are designed primarily for low speeds and with native surfacing. Road and trail density provide for a sense of remoteness and solitude. Common recreation activities include motorized trail riding, four-wheel driving, visiting cultural sites, hunting, fishing, and dispersed camping.
- Roaded natural lands are generally high use travel corridors with a high level of visitor services and associated development. Concentrations of users can be moderate to high. The areas often take on a mosaic of development and resource evidence from highly modified areas to pockets of unmodified lands. Conventional motorized use is provided for in construction standards such as road widths and surface hardening. Road development levels are native surfaced high-clearance to levels that will accommodate passenger vehicles. Offhighway vehicle travel is common on forest roads and trails. Road and trail densities are moderate to high and interaction with the other users is to be expected. Developed campgrounds, picnic areas, trailhead, and interpretive sites may be present within this setting. Constructed recreation facilities provide for resource protection, visitor information and comfort. Hunting, fishing, biking, hiking, and viewing scenery are common activities.
- Rural areas are substantially modified, although they may have natural-appearing elements. Facilities are almost always designed for a large number of people and roads are generally paved. Rural areas are characterized by substantially modified natural environment. The landscape is often dominated by human-caused geometric patterns; there is also a dominant sense of open, green-space. Development of facilities is for user comfort such as pavement on roads and trails, and convenience amenities within campgrounds. Common facilities within this setting would be visitor centers, developed campgrounds that provide electricity and showers, areas with multiple facility developments such as lodges, campgrounds, and recreation residences. Driving for pleasure, viewing scenery and cultural features, camping, and picnicking are common activities.

recreation settings: The collective, distinguishing attributes of landscapes that influence, and sometimes actually determine, what kinds of recreation opportunities are produced.

resilient: The capability to withstand or recover from disturbance or change.

riparian: A type of ecological community that occurs adjacent to streams and rivers. It is characterized by certain types of vegetation, soils, hydrology, and fauna and requires free or unbound water or conditions more moist than that normally found in the area.

riparian area: A form of wetland transition between permanently saturated wetlands and upland areas. Riparian areas exhibit vegetation or physical characteristics that reflect the influence of permanent surface or subsurface water. Typical riparian areas include lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and

reservoirs with stable water levels. Excluded are ephemeral streams or washes that lack vegetation and depend on free water in the soil.

road: A motor vehicle route over 50 inches wide, unless identified and managed as a trail that has been improved and maintained by mechanical means to ensure relatively regular and continuous use. (A way maintained strictly by the passage of vehicles does not constitute a road.)

scenic byways: Highway routes, which have roadsides or corridors of special aesthetic, cultural, or historic value. An essential part of the highway is its scenic corridor. The corridor may contain outstanding scenic vistas, unusual geologic features, or other natural elements.

sediment: Material suspended in liquid or air. Any material carried in suspension by water, which will ultimately settle to the bottom. Sediment has two main sources: from the channel area itself and from disturbed sites.

sensitive species: A plant or animal listed by a state or federal agency as being of environmental concern that includes, but is not limited to, threatened and endangered species.

single-track trail (also known as a singletrack): A trail consisting of one path rather than two parallel paths (as would be the case for a trail intended for OHV (ATV/UTV) travel). In general, single-track trails are narrow and require users to travel in single file.

soil quality: The capacity of a specific kind of soil to function within natural or managed ecosystem boundaries, sustain plant and animal productivity, maintain or enhance the quality of water and air, and support human health and habitation (Natural Resources Conservation Service 2001).

soil productivity: The inherent capacity of a soil to support the growth of specified plants or plant communities.

special-status species: Collectively, federally listed species, species proposed for federal listing, candidates for federal listing, Region 2 Regional Forester's sensitive species, and Colorado Bureau of Land Management State Director's sensitive species.

species of concern: Species for which the Responsible Official determines that management actions may be necessary to prevent listing under the Endangered Species Act.

species of interest: Species for which the Responsible Official determines that management actions may be necessary or desirable to achieve ecological or other multiple-use objectives.

suitability: The appropriateness of a particular area of land for applying certain resource management practices, as determined by an analysis of the existing resource condition of that land. A unit of land may be suitable for a variety of management practices.

sustainability: Obtaining yields and services from ecosystems without irreversibly affecting their resilience, natural resistance to change, or ability to meet the needs of future generations.

trail: A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail.

trailhead: A site that is managed to provide staging for trail use.

tread: The surface of a trail upon which users travel (e.g., natural, gravel, or pavement).

turnpike: A trail feature that raises a trail higher than any wet ground nearby. The technique uses fill material to build up the trail base so that it is higher than the water table.

unauthorized road or trail: A road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas.

viable populations: A wildlife population of sufficient size to maintain its existence over time in spite of normal fluctuations in population levels.

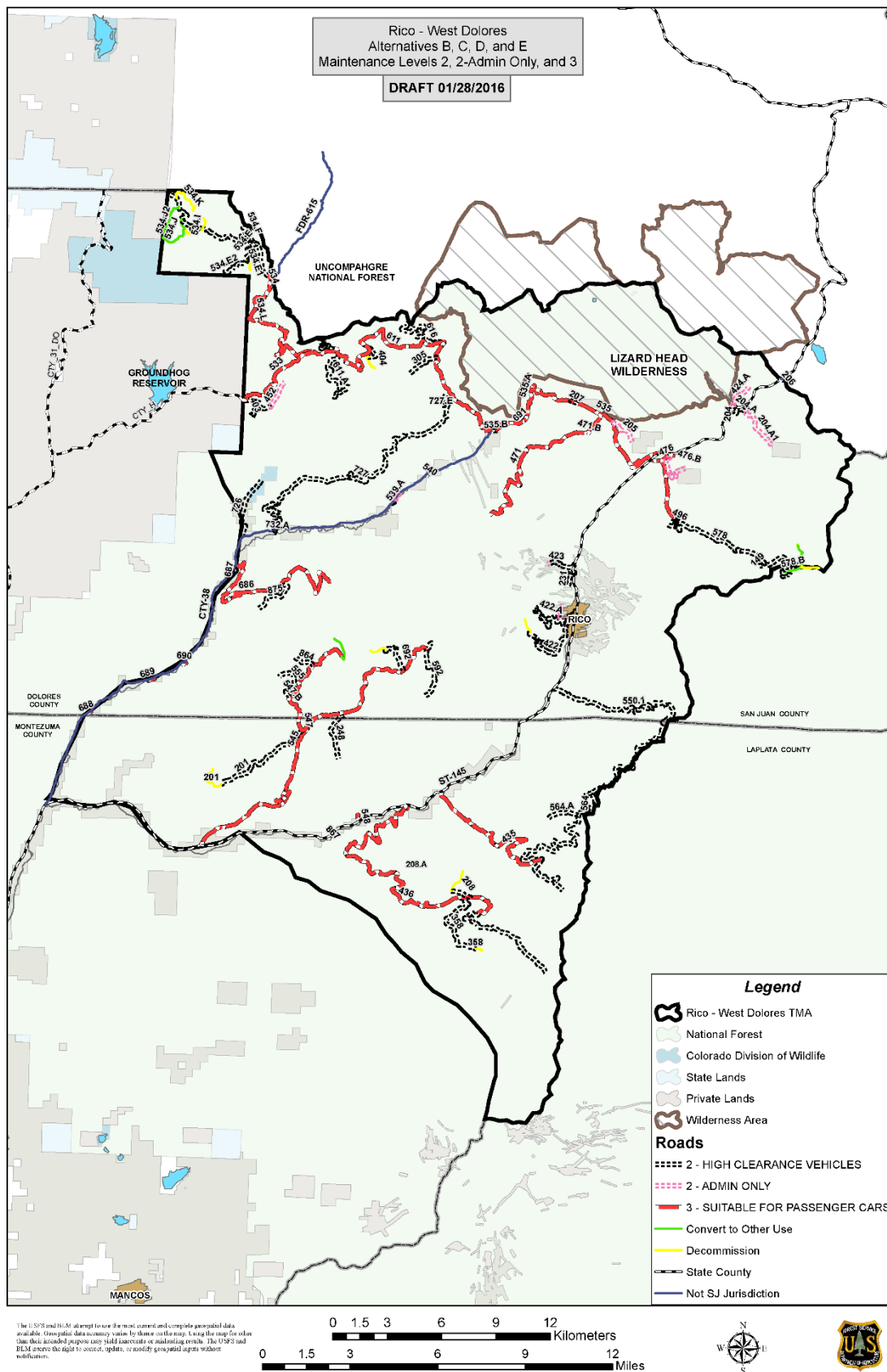
water quality: The biological, physical, and chemical properties of water that make it suitable for specific uses.

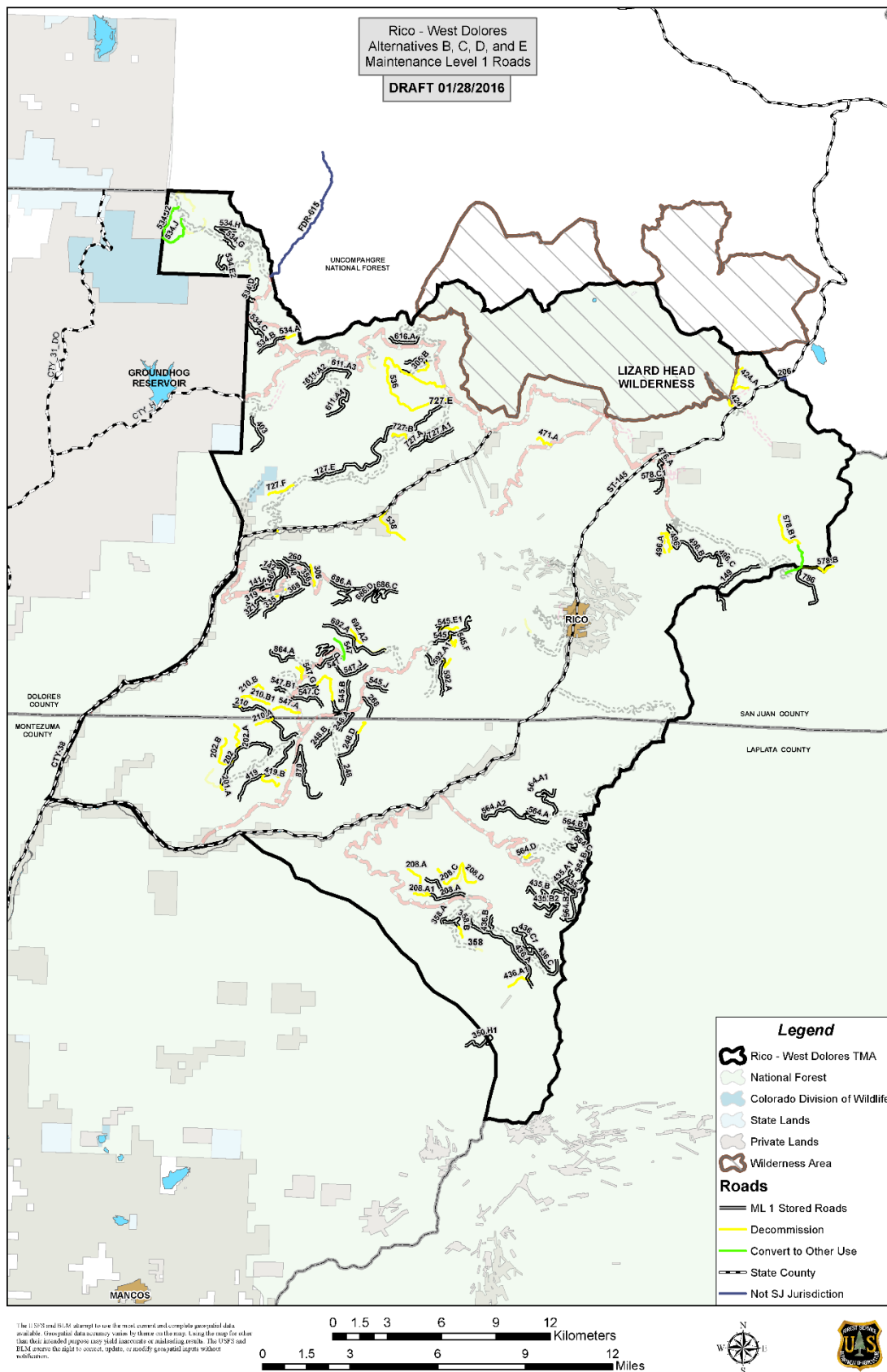
watershed: The entire land area that contributes water to a particular drainage system or stream.

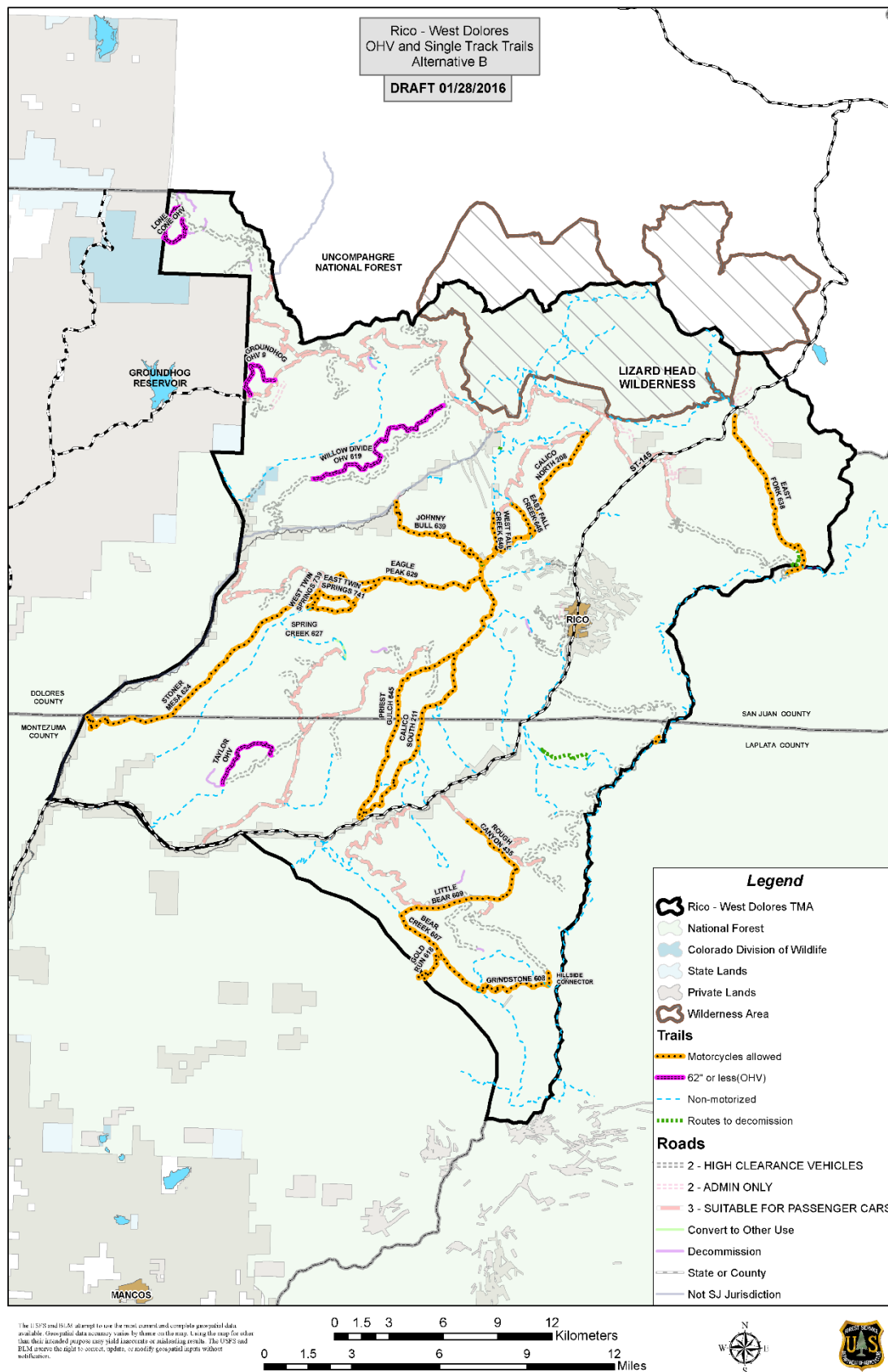
wetlands: Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, etc.

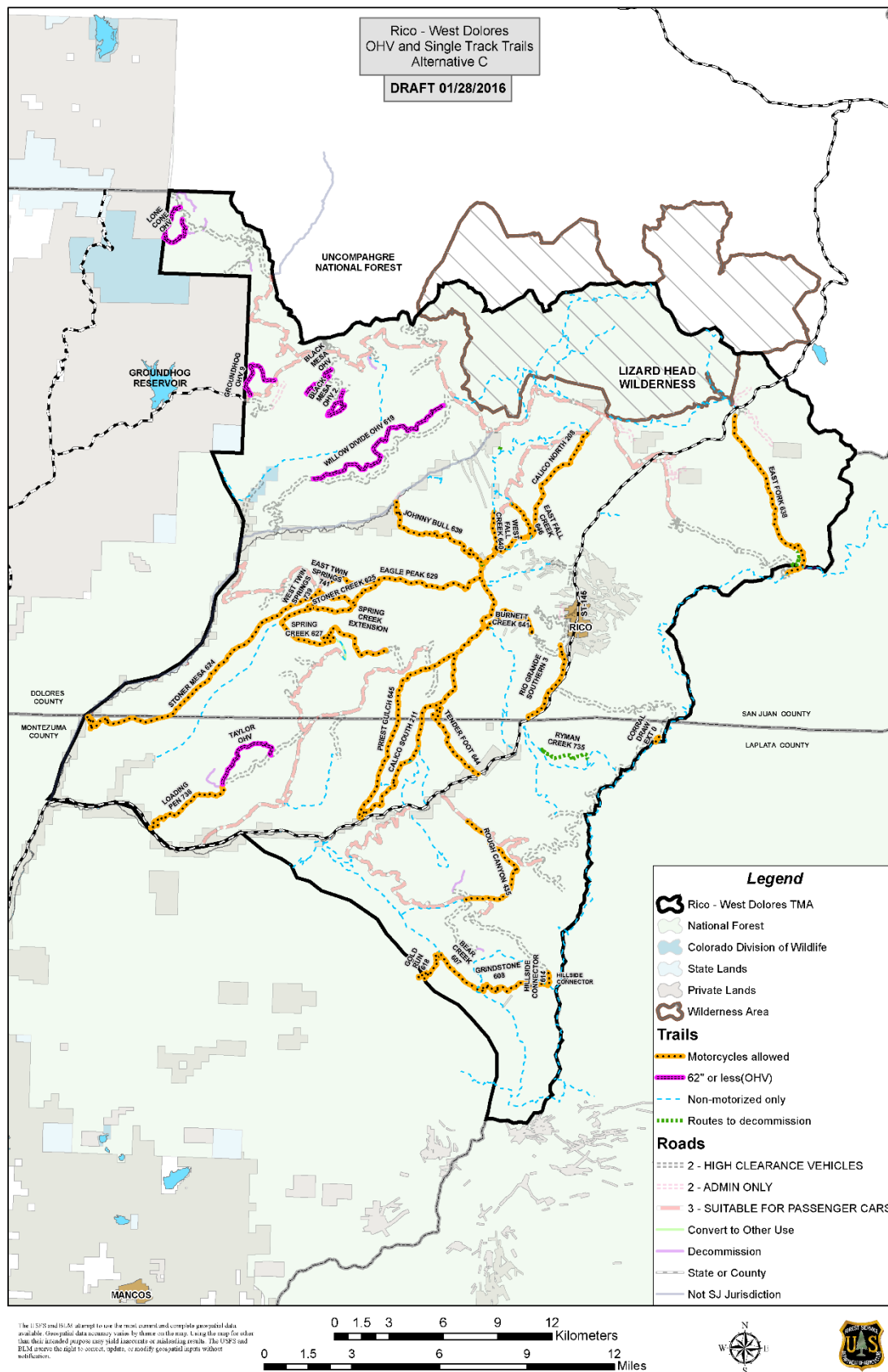
Appendices

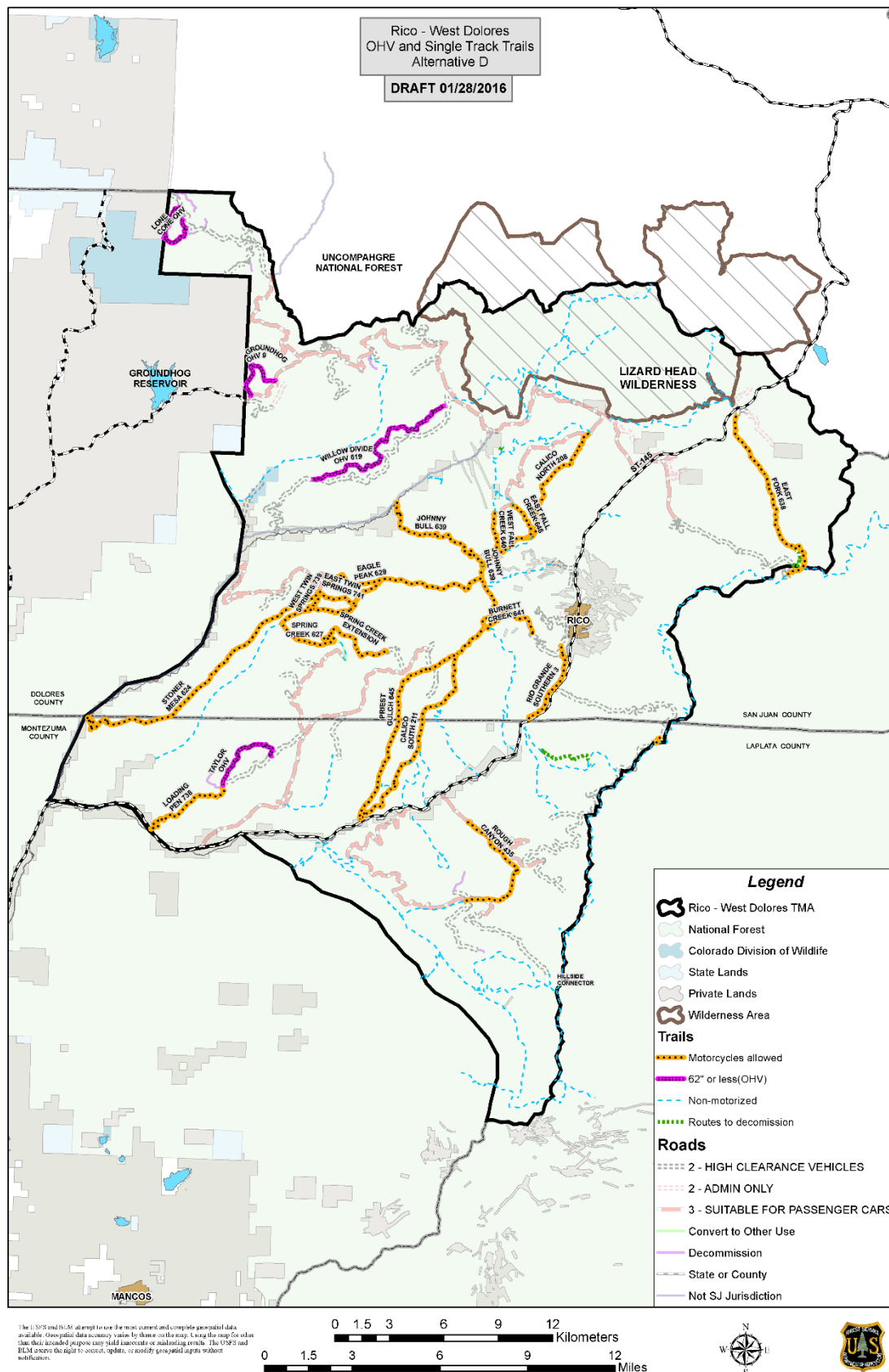
Appendix A – Maps

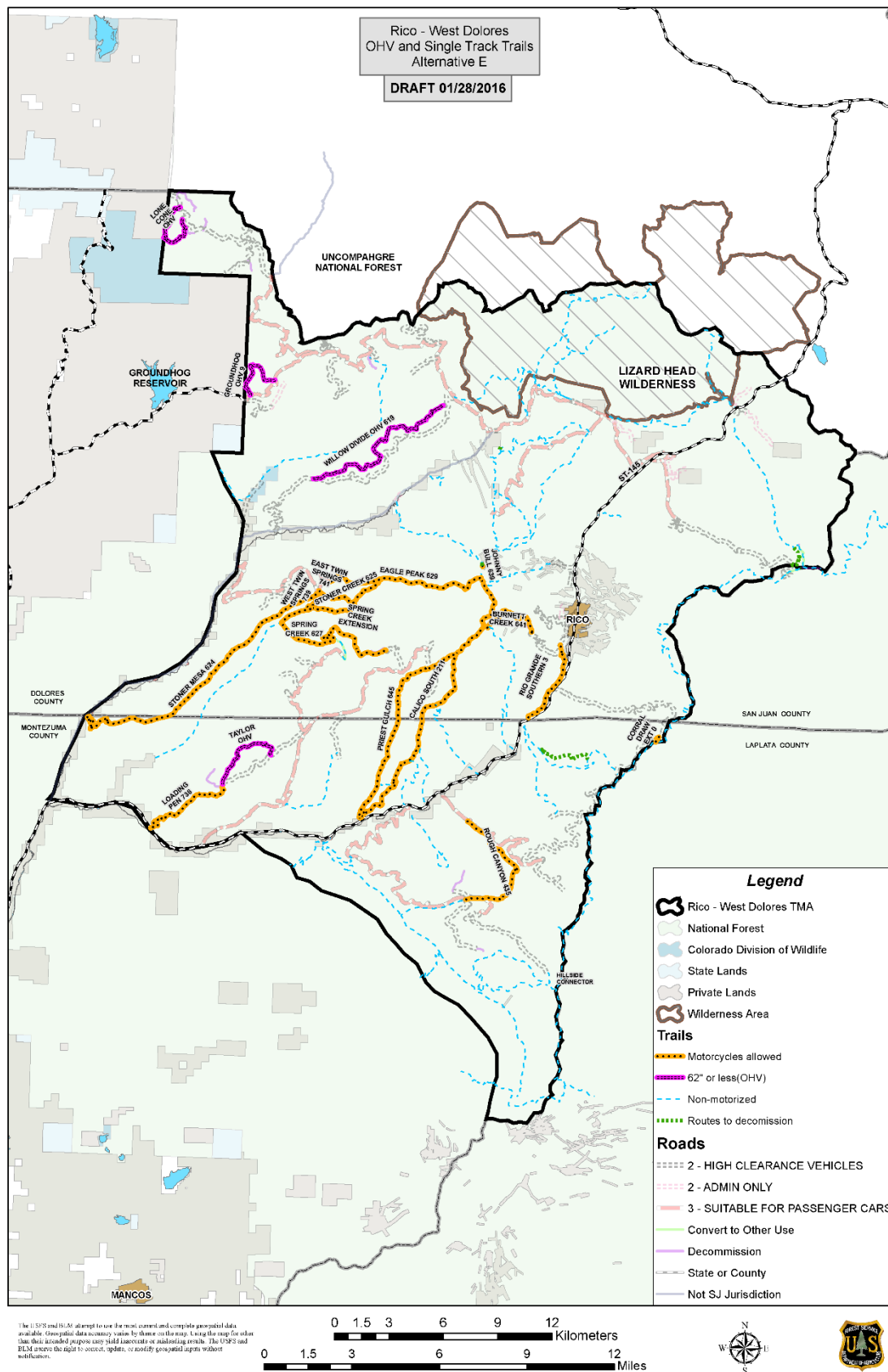












Appendix B – Design Features

The following project design features would apply to any selected alternative.

Trail Layout

1. Sections of road or trail may be realigned up to 500 feet on either side of the current trail tread in order to improve trail layout and maintenance. Sections of trail may be realigned for a variety of reasons, including avoiding wet areas, decreasing grade, adding drainage features, responding to trail slumping or damage, improving safety, or improving stream crossings. The specifications of realignments would be developed by the recreation trails specialist in consultation with engineering, archaeology, wildlife, and hydrology staff. Realignments would not affect allowable uses on the trails. Surveys and clearances may be needed for realignments.
2. New trail locations are subject to final on-the-ground layout which includes consideration of wetlands, cultural resources, rare plants, weed control, user experience and future trail maintenance needs. New trail locations may need survey and clearance prior to trail construction. Any trails that are added to the motorized trail system but require construction or reroutes prior to being utilized by motorized vehicles must have construction completed prior to opening the trail for motorized use.

Riparian and Wetlands

1. Refer to the list below for actions related to wetlands. In addition to the actions and locations provided below, trail damage in fens, wetlands, across streams, or wet meadows will be a priority for trail maintenance or realignment. Where trail maintenance issues occur in these areas, actions to address the issue will occur in a timelier manner than places where exposed rock, tree roots or uneven tread are not connected to wet areas. In addition,
2. The following list shows fens and unverified fens from current GIS mapping sources. The locations or level of impacts have not been verified. During implementation of this project, in order to avoid adverse effects to fens and unverified wetlands, the following measures would be required.
 - a. level 1 roads within 100 feet of fens/unverified wetlands would likely require realignment if/when they are opened for use in the future,
 - b. level 2-3 roads that have been identified as within 100 feet of fens should be evaluated to determine if they are adversely effecting fens, evaluations would occur within 3 years of final decision
 - c. stabilization of fens adversely affected by level 2-3 roads and reversal of long-term adverse effects would be necessary, or if mitigation is not possible than re-evaluate to determine appropriate course of action..
 - d. new trails would be constructed to avoid long-term adverse impacts to fens and wetlands,
 - e. existing motorized trails would be evaluated to determine if they are adversely effecting fens, evaluations would occur within 3 years of final decision,

- f. if, existing motorized trails are adversely effecting fens, then, trail realignments, or trail reconstruction and/or fen stabilization would be necessary to restore health of fen ecosystem. If mitigation is not possible re-evaluate to determine appropriate course of action.
- g. closure to dispersed camping within mapped fens.

Roads within 100 feet of mapped fens or unverified fens

		Mapped features within 100 feet of the Road		Maintenance Level	
Road	Road Name	Fens	unverified wetlands	Alternative A	Action Alternatives
149	Blackhawk		1	1	1
536	Center Drive		1	1	decom
436C	Hillside Drive C	1		1	1
436B	Hillside Drive B	1		1	1
210	Fox Den		3	1	1
547A	Taylor Mesa A		1	1	decom
547C	Taylor Mesa C		1	1	1
692A	Pothole A		1	1	1
Total Level 1 Roads		2	8		
578	Hermosa Park	5		2	2
149	Blackhawk	3		2	2
534	Lone Cone		1	2	2
403	Groundhog point		2	2	2
436	Hillside Drive	1	2	2	2
555	Hell Canyon		1	2	2
533	Groundhog		3	3	3
436	Hillside Drive	4		3	3
611	Black Mesa	1		3	3
545	Taylor Crk	4		3	3
Total Level 2-5 Roads		18	9		
Total Level 1-5 Roads		20	17		

Motorized trails within 100 feet of mapped fens and unverified fens.

Trail Number	Trail Name	Mapped Features within 100 feet of the trail		X' indicates that the trail would be located within 100 feet of Fen/unverified wetlands by alternative				
		Fens	unverified wetlands	Alt A	Alt B	Alt C	Alt D	Alt E
	Groundhog OHV		1		x	x	x	x
	Pothole Singletrack		1			x	x	x
211	South Calico Singletrack		3	x	x	x	x	x
202	Winter Trail Singletrack	1		x	*	*	*	*
638	East Fork Dolores Singletrack	3		x				
435	Rough Canyon Singletrack	1		x	x	x	x	x

* Trail would continue to be in the same location, near a fen, but would be non-motorized

In addition to the above mapped areas, if new fens/wetlands are located contact the District hydrologist to provide input on trail maintenance or trail developments needed to prevent long term adverse impacts.

Wildlife

1. Allow the district ranger to adjust seasonal closure dates annually, based on road, trail or wildlife habitat conditions or severe or mild winters or high precipitation summers
2. If road or trail new construction, road construction, decommissioning or realignment activities are within 1/4 to 1/2 mile of large cliff faces, or within ¼ mile of mapped or newly found raptor nests, or other migratory bird nests, contact the District wildlife biologist who will determine if timing restrictions or nest protections are needed.
3. Contact wildlife biologist if activities occur within riparian vegetation or stream channels (see also wetland design features above)
4. If new alignments or trails, or road reconstruction or decommissioning activities occur within ¼ mile of inactive mines (sensitive bat habitat, contact the wildlife biologist

Rare Plants

1. Necessary surveys for Sensitive plants will be conducted before any ground disturbing activities that occurs in the implementation phase.
2. Surveys for Pagosa Skyrocket and Sensitive plant species should occur prior to the revegetation and decommissioning of specific roads and trails. This is particularly important within and adjacent to wetland and riparian areas. In order to afford long-term protection from system and non-system roads and trails in the vicinity of confirmed occurrences travel routes may be considered for decommissioning, including appropriate design features to ensure protection of the plants from adverse effects of decommissioning.

Weeds

1. Recreation staff will continue to coordinate with the noxious weeds specialist or range staff on treatment of invasive plant species along trails, at trailheads, campgrounds, and dispersed campsites.

Cultural Resources

1. Complete required cultural resource inventories and State Historical Preservation Office (SHPO) consultations before implementing any ground disturbing activities associated with this project. At each phase of implementation, require recreation or engineering staff to inform the district archaeologist about any ground disturbance. Depending on the sites involved, require the district archaeologist to review any maps and cultural resource surveys or to consult with tribes or SHPO. Protect all cultural resource sites that are eligible for the National Register of Historic Places, as well as those that require further work before a determination of eligibility can be made. When needed, protect sites from potential impacts by avoiding them or implementing other mitigations.
2. Require the Forest archaeologist to consult with tribal historic preservation officers as deemed necessary by the District Archaeologist when sites are discovered and/or impacted.
3. Maintenance activities should remain within the existing prism of roads and trails. Should maintenance activities be required outside of the existing prisms review the Cultural Resources report and contact the District archeologist prior to ground disturbance.

Public Education, Outreach, Enforcement

1. Improve brochures and public information to explain topography and technical difficulty of trails for motorcycle riding. Information should list the state standard for sound (decibels, or relative loudness) and discourage use of trails by motorcycles with modified exhaust systems. Partner with CPW regional trails coordinator and user groups to design and product brochures or other public outreach information.
2. Limit all over-ground motorized vehicle use to routes that are part of the official transportation system, as shown on special travel maps. Assign each road or trail a system number. Administratively close routes not shown on the travel map and prohibit motor vehicle use by the general public. Enforce closures.
3. Continue to enforce regulations through the use of signs, physical barriers, and patrols.
4. Promote “Tread Lightly” and “Leave No Trace” concepts for motor vehicle use.³⁰
5. Limit use of 62-inch trails to motorcycles, ATVs or UTVs that meet the width requirement. Prohibit the use of full-size vehicles (including jeeps that are 62 inches wide) on these trails.

³⁰ The public is encouraged to “Tread Lightly” when selecting a campsite. The site should be on dry ground, some distance from a stream or pond. Driving to campsites should not cause muddy ruts. Campers are encouraged to pick up trash, bury human waste, and never leave a campfire unattended.

6. National Forest System Roads would be open to ATV and motorcycle operators and would be subject to the State of Colorado's ORV "sticker" program, unless otherwise designated.

Parking for Dispersed Camping

1. Allow vehicle parking for the purposes of dispersed camping within 300 feet of designated Forest roads and motorized trails.
2. If resource damage related to vehicle use for camping occurs within the 300-foot buffer, prohibit camping with a sign or physical barriers, or address resource impacts through site hardening or other best management practices. If non-system routes leading to popular dispersed campsite exist beyond the 300-foot buffer, evaluate whether or not to add road spurs to the designated road system (contingent upon appropriate clearances and public notice).
3. Close all trailheads to overnight camping except at Johnny Bull, Kilpacker, and Ryman Creek Trailheads.

Livestock Operations

1. Modify grazing allotment annual operating instructions to allow travel along existing fence lines by ATVs, UTVs or small rubber-tired tractors or skid-steer loaders for construction or maintenance of authorized improvements. When appropriate, allow use of these vehicles to access springs, water sources, or salt placement areas.
2. Install trail cattle guards at all fence crossings on all new single track, ATV or UTV trail and on existing trails as needed.
3. If trails create travelways for livestock in areas where vegetation currently restricts movement between pastures, construct a trail cattleguard and adjacent fence line as needed to ensure livestock don't use the new pathway to move between pastures.

Future Use of Level 1 Roads

1. Stored Level 1 roads may only be opened and used for timber sales or other projects after appropriate NEPA analysis and line officer decision is made to convert the road to an open Level 2 road for that specific project. The NEPA analysis will also explain how long the road will be used, actions necessary to place the road back into storage and when that would occur.

Mixed Use Mitigation Measures

1. Continue to implement actions described in the Engineering Reports for Mixed Use Designation. This may include "Share the Road" signs, "Not Recommended for Trailers" signs, reflective markers at curves, and/or brushing. Roads for which actions were identified are NFSR's 435,436,496,533,534,535,545,547,578,611,686,692, and 727.

Road Decommissioning

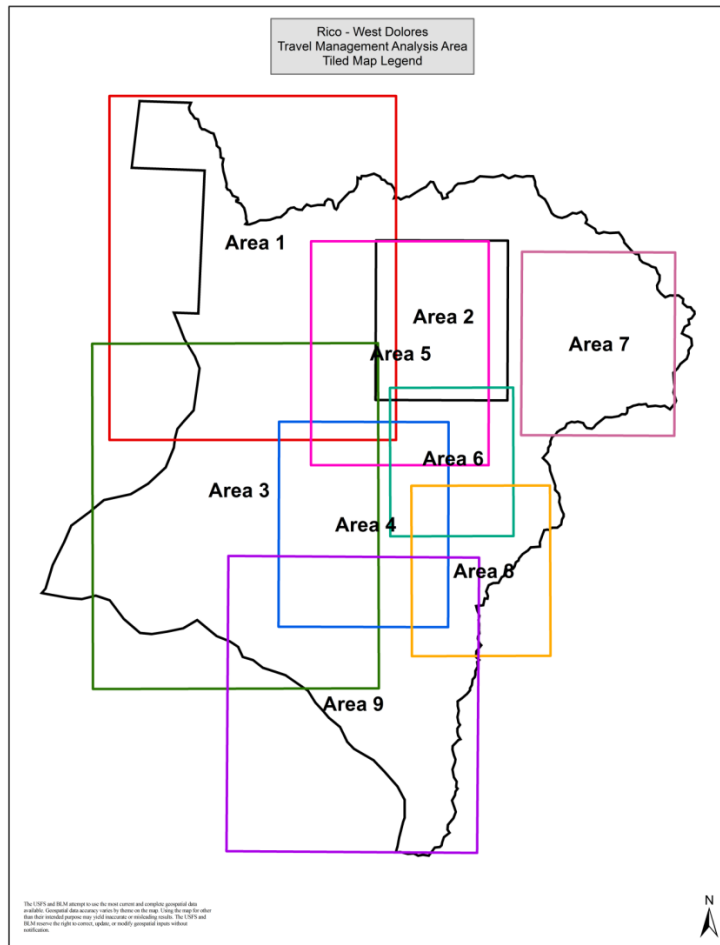
1. Restore decommissioned roads or sections of trails (those no longer serving as roads or trails) to a vegetated state.
2. Use the following Implementation Tree for Road Decommissioning

Road Decommissioning Implementation Tree

- 1) Conduct field checks to verify location and condition of routes. Determine whether ground-disturbing techniques are necessary for revegetation by implementing the following If-Then scenarios:
 - a) If ground is moderately compacted; some grasses or shrubs are growing on the route; or water drainage is acceptable,
 - i) Then block access (maybe on sections of route only) by,
 - (1) Signing
 - (2) Placing boulders
 - (3) Falling trees across entrance
 - (4) Planting trees or shrubs Disguising the entrance
 - b) If ground is highly compacted; there is little vegetation; a drainage is causing erosion; or sedimentation in adjacent water bodies,
 - i) Then use a ground disturbance technique such as
 - (1) Scarifying or ripping
 - (2) Adjust depth to amount of compaction by
 - (3) Scratching (subsoiler)
 - (4) Digging down 6 inches
 - (5) Digging down 12 inches (only if very highly compacted)
 - (6) Turning up rocks (as little as possible in rocky soils) (visuals and safety)
 - (7) Ripping parallel to the contour, not parallel to the route
 - (8) Re-contouring at drainage crossing with a dozer
 - (9) Drill seeding
 - c) If people drive around entrance closures or across areas that have been scarified,
 - i) Then install larger barriers by
 - (1) Installing a berm
 - (2) Back away from intersection
 - (3) Build it high enough to block traffic
 - (4) Installing large rocks
 - (5) Installing large brush piles
 - (6) Installing rocks or barriers at multiple places along the route to discourage use
 - d) If making physical changes,
 - i) Blend and blur linear road feature with the surrounding landscape
 - ii) Remove any drainage structures such as culverts
 - e) Conduct public outreach by,
 - (1) placing sign at entrance to area explaining why ground disturbance is happening
 - (2) publishing media information about the project
 - (3) placing closures behind popular dispersed campsites
 - (4) contacting the public in the field

Appendix C – Existing Conditions by Sub-Area

To facilitate the sharing of information about the RWD landscape, the project area is divided into nine geographic regions as depicted below:

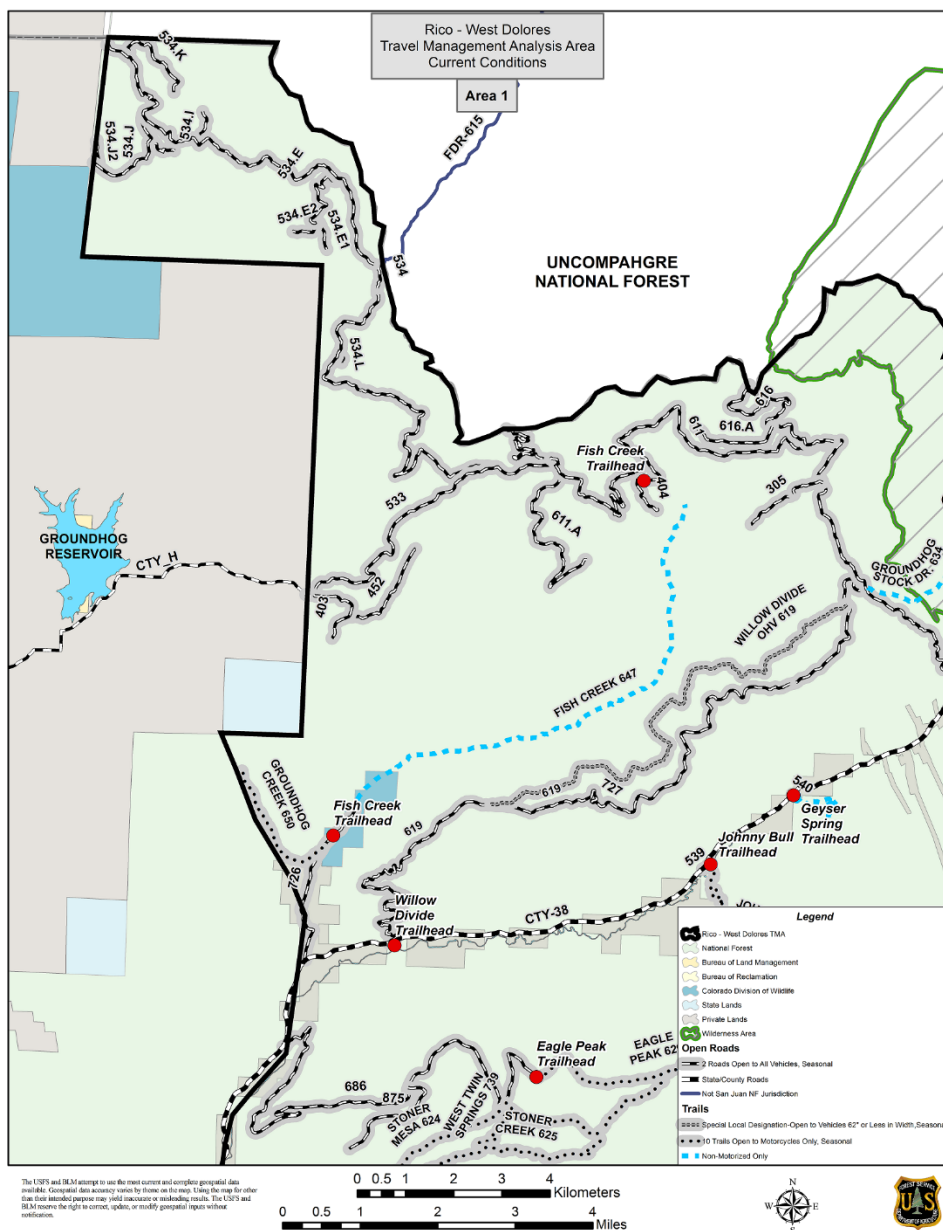


Sub-Area 1- Lone Cone, Groundhog Point, Fish Creek, and Willow Divide

Lone Cone, Groundhog Point, Fish Creek, and Willow Divide are popular destinations in the summertime for dispersed camping, and many people enjoy riding all-terrain vehicles (ATVs) and side-by-side utility vehicles (UTVs) on the Forest roads. Groundhog Lake RV Park and Campground is located on private lands adjacent to this area, and recreationists take day rides from Groundhog Lake (also known as Groundhog Reservoir) onto the Forest. From the Groundhog area, NFSR533 connects to NFSR611 and over to NFSR535 (the West Dolores Road). NFSR611A provides access to forest products and is popular for ATV and UTV riding. NFSR534 connects to the Norwood District of the Grand Mesa, Uncompahgre and Gunnison (GMUG) National Forests. This sub-area is popular with big-game hunters, who enjoy dispersed camping and scouting on roads with trucks ATVs or UTVs on forest roads during the fall. Other hunters prefer to park at the end of roads and walk into blocks of land without motor noise

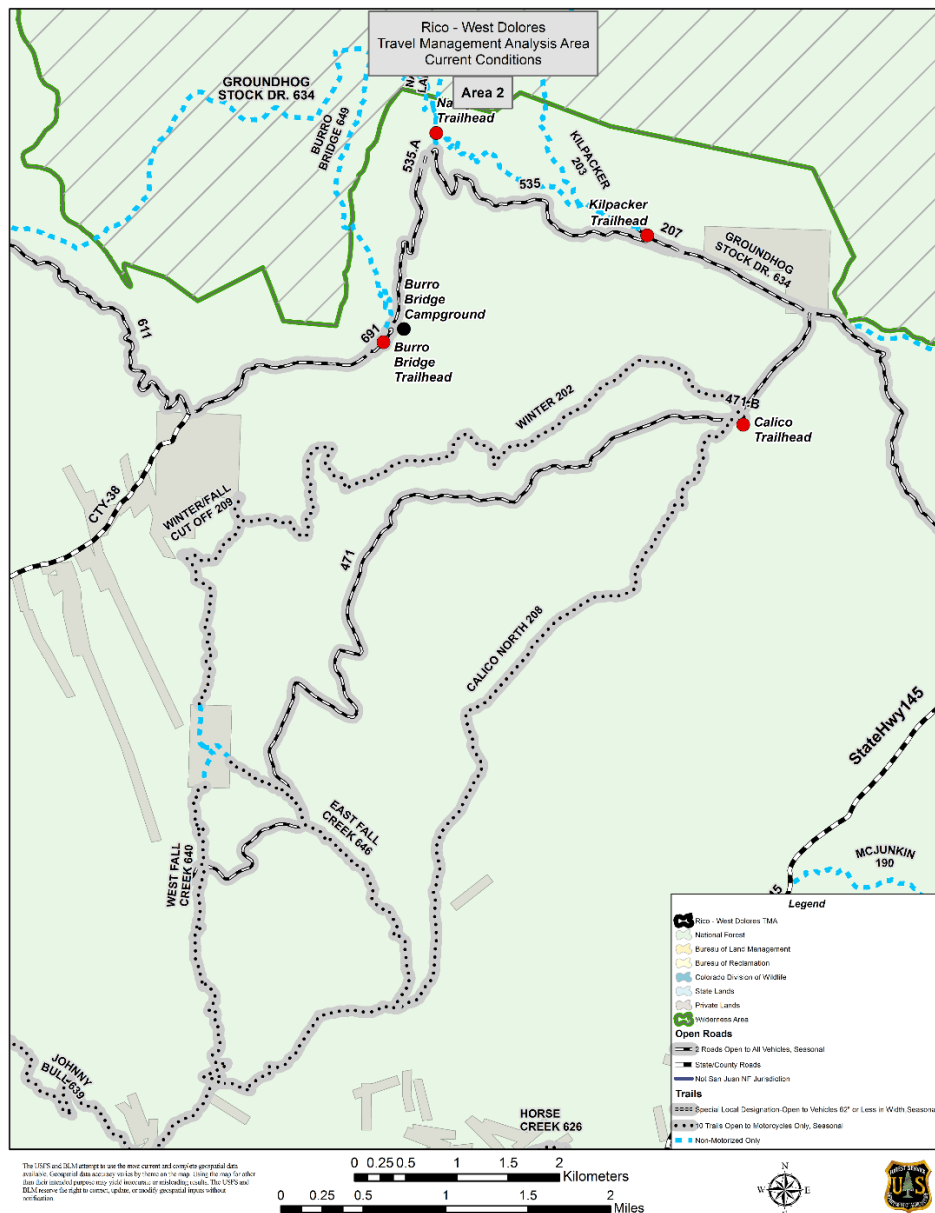
interruptions. Part of the San Juan Hut System is located off of NFSR611. There are only a few single-track trail miles in this sub-area, none with motorcycle riding currently.

Sub-Area 1 includes high-elevation stands of aspen, spruce, and fir with many high-elevation meadows that contain a lot of standing water and wet soils. Springs, creeks, and ponds are abundant, supporting willows, beaver, and other water-related vegetation and wildlife. Road conditions vary and some sections are rough with poor water drainage. In places, users have created alternate routes around wet areas.



Sub-Area 2 – Winter Trail, East Fall and West Fall Creek Trails, and NFSR471

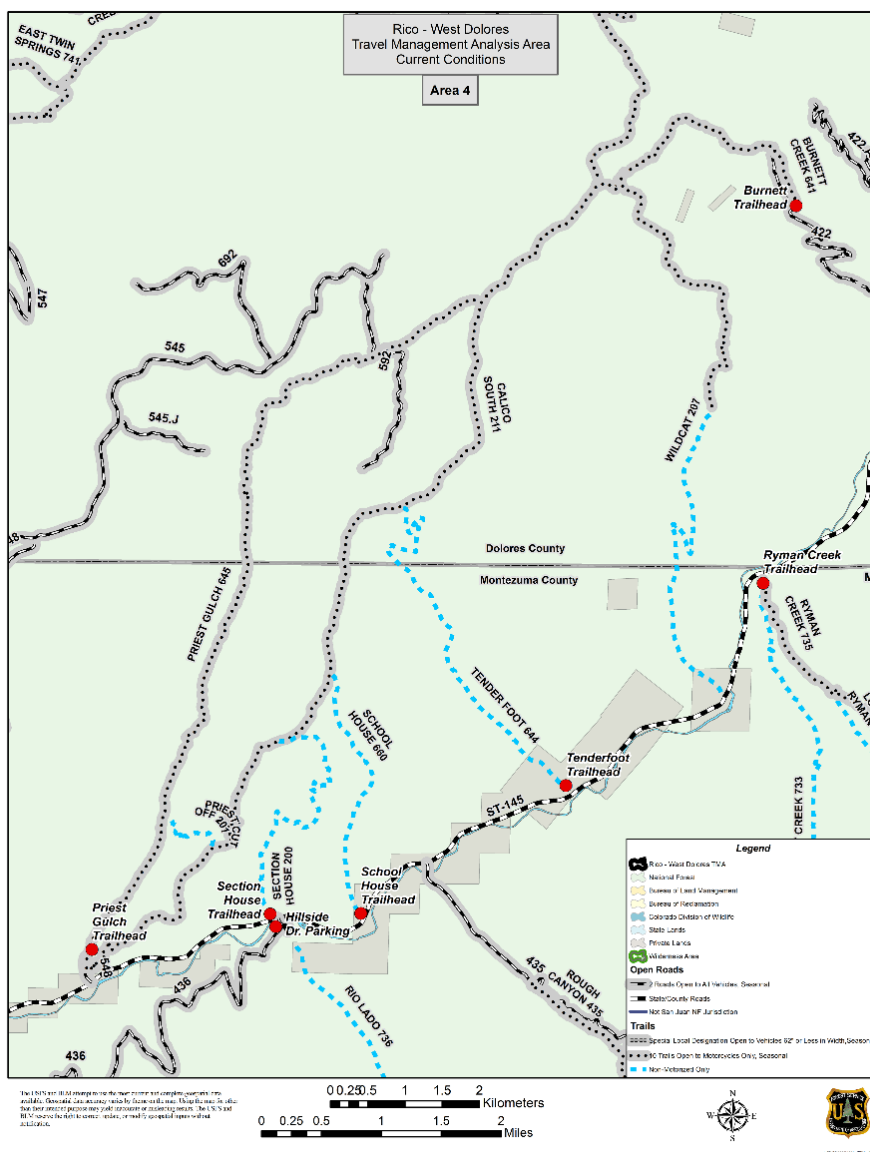
Another area of high-elevation recreation opportunity exists in Sub-Area 2. NFSR471 provides access to dispersed camping and reaches almost to tree line, where it intersects with the East and West Fall Creek trails. These trails travel upslope to connect above tree line with Calico NRT. Winter Trail lies at somewhat lower elevation west of NFSR471 and east of the West Fork road. Winter Trail is less steep, and passes through marshy forested areas. The West Fork Road corridor in this sub-area includes Burro Bridge Campground and Dunton Resort. A private inholding is bisected by the two branches of the Fall Creek trails. Forests in Sub-Area 2 range from aspen, wet meadows, spruce and fir forests at the lower elevations to alpine tundra at the upper ends of the East and West Fall Creek trails. Some sites along Winter Trail are quite marshy.



Sub-Area 3— Taylor Mesa, Stoner Mesa, Spring Creek, East Twin Springs and West Twin Springs

245

From the Priest Gulch Trailhead, located across from the Priest Gulch Campground on Hwy. 145, trails climb upslope to connect with Calico NRT above timberline near Storm Peak and Expectation Mountain. Trails include Priest Gulch, the lower end of the Calico, Tenderfoot, Schoolhouse, Section House, and Wildcat. The Priest Gulch Trailhead provides a jumping-off point for day hikers traveling the San Juan Scenic Byway as well as long-distance hikers and riders. It is a main connection point from trails on the east side of the RWD area to trails on the west side. The unroaded lands surrounding these trails are part of the Storm Peak Roadless Area. Ponderosa pine, Douglas fir, and oak brush occur on south-facing slopes at lower elevations, forests transition to aspen then spruce/fir and alpine vegetation at the higher elevations. The area is bisected by creek drainages, including Tenderfoot Creek, Priest Creek, Schoolhouse Draw, and Wildcat Creek.



Sub-Area 5 – Upper Calico, Johnny Bull, Eagle Peak Trails

Rico - West Dolores Travel Management Analysis Area Current Conditions

Area 5

Legend

- Rico - West Dolores TMA
- National Forest
- Bureau of Land Management
- Bureau of Reclamation
- Colorado Division of Wildlife
- State Land
- Private Lands
- Address Area

Open Roads

- Roads Open to All Vehicles: Seasonal
- State/County Roads
- Not for Sale: Just for Fun: Not for Sale

Trails

- Seasonal: Seasonal Local Designation Open to Vehicles 62 or Less in Weight/Season
- Motorcycles Only: Motorcycles Only, Seasonal
- Non-Motorized Only

Scale

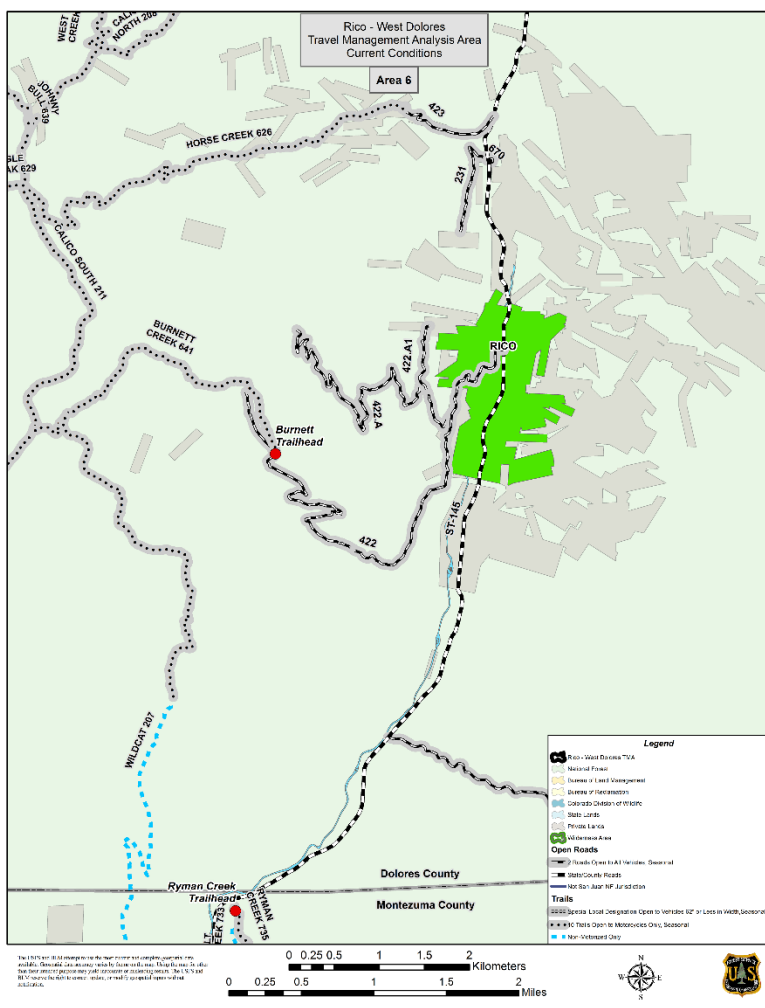
0 0.25 0.5 1 1.5 2 Kilometers

0 0.25 0.5 1 1.5 2 Miles

247

Located on the west side of the Town of Rico, the Burnett Creek and Horse Creek trails travel upslope and connect with Calico NRT at the ridgeline. Both trails are accessed by Forest roads. NFSR422 (Burnett Road) connects to streets in the Town of Rico. Horse Creek Road passes through parcels of private land and connects to Hwy. 145 just north of the Town of Rico. Both of these roads are popular access points that enable residents to reach the trails, collect firewood, or pick berries. Currently the Burnett and Horse Creek Trails provide for multiple single-track trail uses, including motorcycle riding. One road, NFSR426, is a very rough road that provides access to a communication tower on Expectation Peak. There are no designated Forest Service roads or trails on the east side of the Town of Rico. This sub-area includes lands within Management Area 2 – Rico Special Area. The Forest Plan identifies lands around the Town of Rico for special management considerations regarding the town.

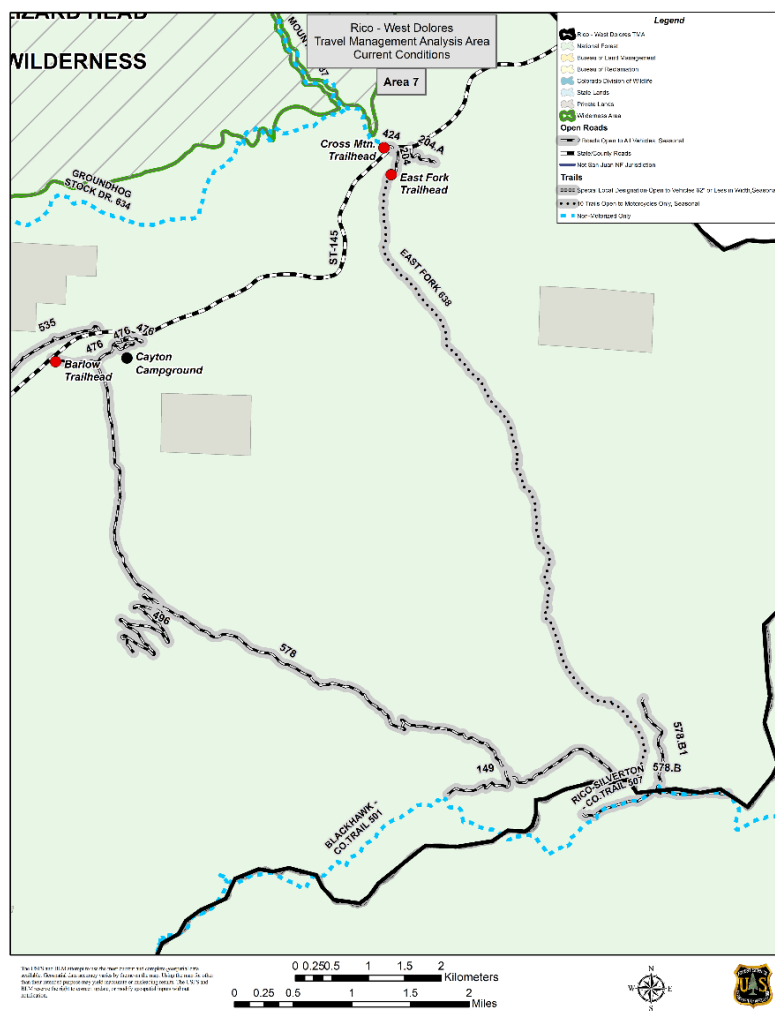
As with the other sub-areas, vegetation in Sub-Area 6 includes slopes of spruce/fir-bisected creeks, including Horse Creek and Burnett Creek. Upslope of Burnett Trail are large, high-elevation mountain grasslands; still higher are alpine vegetation and rocky, talus slopes where the trails connect to Calico NRT.



Sub-Area 7 – Barlow Road and East Fork Creek Trail

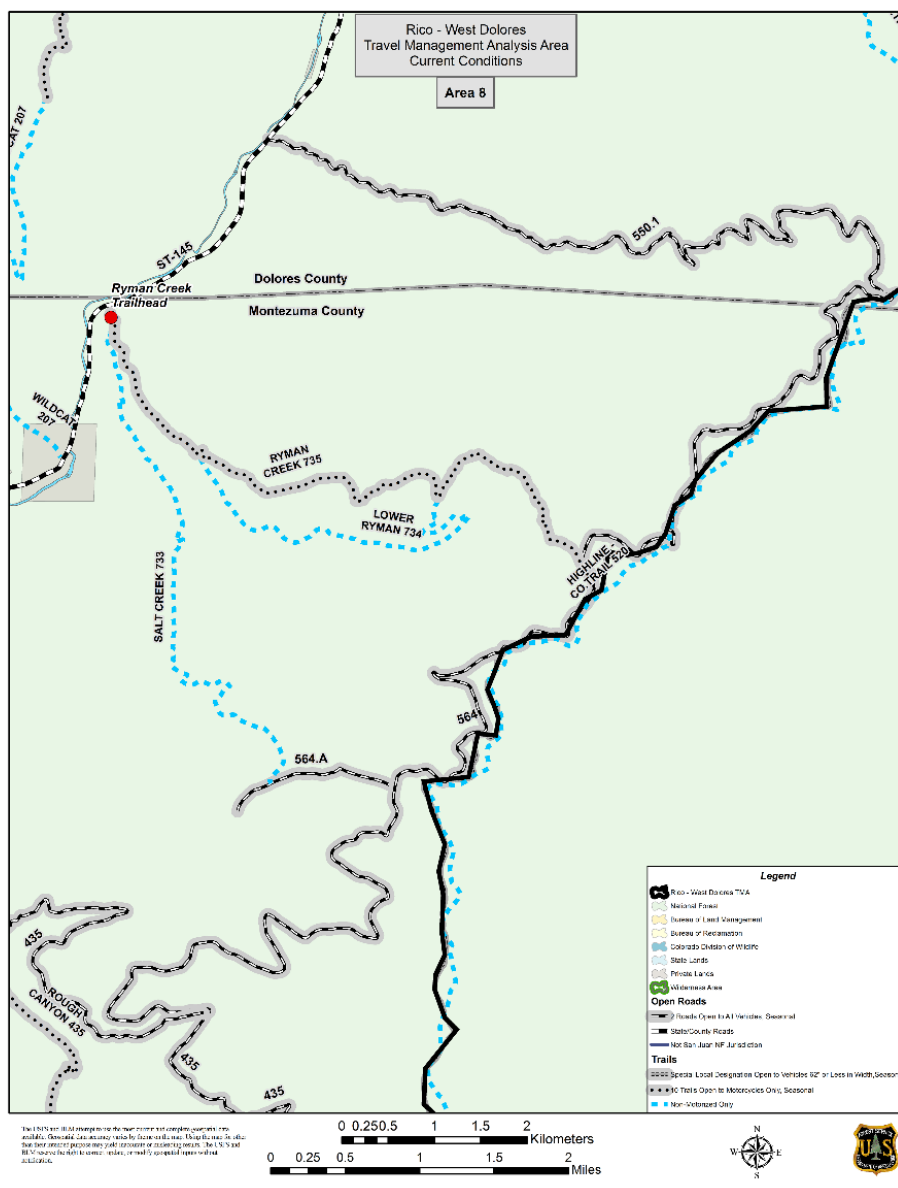
This area, located north of the Town of Rico and east of Hwy. 145, includes FR496 (known locally as Barlow Road but listed in the Forest Service database as Hermosa Road). NFSR496 starts at Hwy. 145 near Cayton Campground and winds up to Bolam Pass at the top of the La Plata Mountains. East Fork Trail stretches from Hwy. 145 near Lizard Head Pass up to NFSR578, which intersects with the Colorado Trail. North of East Fork Creek lies Sheep Mountain and the newly designated Grizzly Creek Research Natural Area. Although very rough and passable only by high-clearance vehicles, ATVs, and UTVs, FR578 is popular with hunters for accessing the high country around Bolam Pass. It also provides access to popular sections of the Colorado Trail during summer. This road provides access to part of the San Juan Hut System, which mountain bikers use. East Fork Trail currently provides single-track trail experiences, including motorcycle riding. Just north of the East Fork Trailhead is Lizard Head Pass, where summertime dispersed camping is very popular, especially on holiday weekends.

This entire sub-area contains high-elevation forests because it begins at Lizard Head Pass. It includes spruce, fir, mountain meadows, and marshy areas such as fens. The newly designated Grizzly Peak Research Natural Area is located in this sub-area and has specific management direction related to this designation.



Sub-Area 8 – Ryman Creek, Lower Ryman, Scotch Creek, and NFSR564 (Roaring Fork Road)

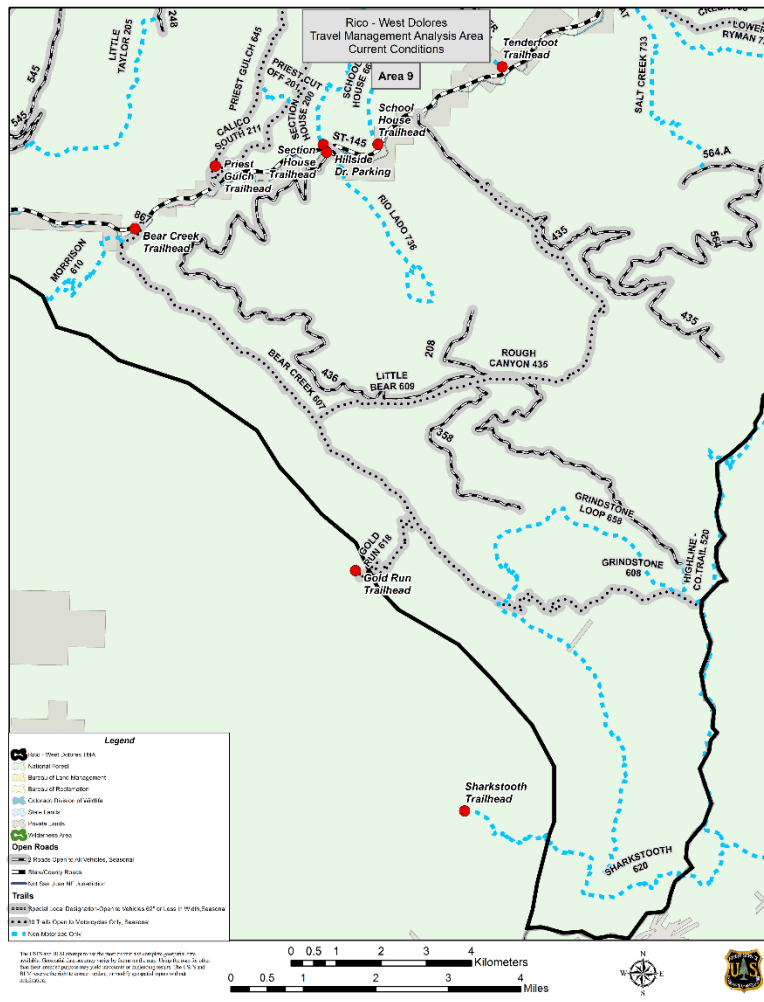
NFSR435, which intersects Hwy. 145 from the east, eventually meets NFSR564 (the Roaring Fork Road). From there, NFSR564 heads north, parallels the Colorado Trail along the ridgeline, and intersects with NFSR505 (the Scotch Creek Road). These roads popular routes for reaching high-elevation scenic vistas, dispersed camping, and the Colorado Trail which travels along the LaPlata mountain ridgeline. Salt Creek and Ryman Creek Trails travel from Hwy. 145 upslope to the Colorado Trail. Like Sub-Area 7 described above, the country surrounding Ryman Creek and Scotch Creek is steep and rolling, with meadows and fens at the higher elevations. Much of this area is comprised of the Morrison Formation, made up of tilted layers or red-colored soil and reddish rock outcrops. Large aspen stands occupy the mid-level slopes. A portion of this sub-area is within the Ryman Roadless Area.



Sub-Area 9 – Bear Creek, Little Bear, Grindstone, Rough Canyon, Hillside Drive, and Roaring Fork Road

The Bear Creek Trailhead and parking area on Hwy. 145 provide an easy jumping-off point for day hikes, which are becoming increasingly popular along this section of the San Juan Scenic Byway. Most day-hiking occurs on the first 4 miles of Bear Creek Trail. This trail parallels Bear Creek (a substantial perennial stream) and connects to Sharktooth Trail and the Colorado Trail at the head of the drainage. There are only single-track trails within the drainage itself, with NFSR146 (Hillside Drive) running parallel, along the north rim. Connecting single-track trails include Gold Run Trail (which connects to Forest roads on Haycamp Mesa), Grindstone, and Little Bear (which connect to NFSR146 and Rough Canyon Trail). Bear Creek is a popular fly-fishing stream and has been described as one of only a few perennial creeks not bordered by a road. The drainage is a destination for guided fishing trips. Currently, single-track trails within the Bear Creek drainage provide motorcycle riding opportunities, including a loop ride. Private land just south of the current Bear Creek Trailhead is bisected by Morrison Trail. A portion of this sub-area is within the Hermosa Roadless Area.

The Bear Creek drainage contains willows and sedges along the creek, patches of aspen, pine stands on south-facing slopes, and spruce/fir forests at the higher elevations.



Appendix D – Crosswalk to TAP Report

The following text and tables describe road changes that would occur in the action alternatives and how those changes relate to recommendations in the TAPR.

Sub-Area 1 – Lone Cone, Groundhog Point, Fish Creek and Willow Divide

Current road data displays NFSR 533 Groundhog as a ML 4 road providing for user comfort and moderate speeds. All alternatives propose a ML3 for this road. A ML 4 does not fit the landscape, road structure or the user types. ML 3 practices could lower the risks associated with user safety while still maintaining the structural design feature necessary for all user groups and resource management. All drainage features would continue to be maintained, all road-water interaction would be expected to continue with no change.

The TAP recommended removing 534.E2 to reduce road miles, however, further evaluation through this analysis proposes to maintain 534.E2 and a ML2 road. NFSR's 534.F is a ML1 road that was not previously addressed in the TAP and would be another addition to the ML2 system.

NFSR 534.J and 534.J2 have beneficial uses as OHV trails but do not have the design characteristics and prisms to function as open ML 2 standard roads. Therefore proposals to convert use to OHV trail (Alternatives B, C, D and E) is a good option for these roads.

The Fish Creek Trail head is accessed by NFSR 404 Black Mesa Spur. The current alignment causes confusion to where trail access begins and this contributes to the unauthorized motor vehicle use in the Fish creek drainage. Decommissioning the 0.619 miles beyond the trail head and constructing a small turnaround eliminates a segment of road that presents maintenance issues associated with inadequate drainage. The small turnaround also provides additional utility in enforcement of appropriate motorized uses.

NFSR 616.A has been proposed for storage. The Risk/Benefit analysis identifies this road as a medium risk and a medium benefit. The closure strategy for this segment has been estimated as a gate in the implementation section, as there is a possibility of future activity.

NFSR 452 is a ML 2 road and is currently gated at mile post 0.46. This proposed change in operational status is a database clean up action only.

The addition of a new system road has been proposed off of NFSR 403 Groundhog Point. The proposed ML for this segment is a level 2 recommended for high clearance vehicles. From an Engineering perspective the addition of this segment would add to the miles of road that are poorly located with limited opportunities for drainage. The user's expectation of a system road would be very difficult to maintain given the existing condition and as estimated in the roads implementation cost section of this report. A design to construct a road in this location would include constructed features such as culverts, geotextile and 3" minus road base. These items would result in up-front costs, annual and deferred maintenance. This segment could be considered as a trail greater than 50" to allow access, as is, without the maintenance expectations. For the purposes of identifying and locating this proposed road engineering has assigned the road number 404.A.

The operation and maintenance of NFSR 727 Willow Divide currently is a ML 3 road for 2.2 miles of its most northeastern extent. Though the database describes this as an aggregate surface road, the Mixed

Use Analysis characterizes the surface as “6-inch cobbles in fair to good condition but results in a very rough road surface”. A prudent driver in a standard passenger car may be able to navigate such a road way so the proposal to reduce maintenance level is appropriate for this road.

NFSR 305 Clear Fish is currently a ML2 road 1.55 miles in length. This alignment presents many maintenance challenges as the road prism has become incised in many locations. Beyond the proposed closure location 305 follows a steep grade leading to consistent water bar failure. This segment terminates at Fish Creek, possibly presenting water quality issues. Because of this, from an engineering maintenance perspective, the proposed ML 1 stored segment would be better managed if it was decommissioned including re-contouring and seeding. The risk / benefit analysis assigns a medium risk and medium benefit to both segments of NFSR 305. Some consideration should be given to the closure device implementation strategy at this location. This location may be susceptible to vandalism and a gate may prove ineffective. A gate has been estimated in the implementation section for this location for the proposed action of ML1 stored road.

NFSR 727.E is currently a ML1 road that provides access to the Willow Divide OHV Trail. This road was evaluated in the TAP as a ML1 road to keep in the minimum road system. The designation of ML1 is inappropriate for open roads. The proposed action is to open approximately 0.18 miles of this road as a ML2 to provide legal access to parking and dispersed camping areas.

The addition of two new system road spurs at the Willow Divide Trailhead have been proposed. Maintaining the end point of these two routes will likely be an enforcement challenge given the open terrain. These segment could also be considered as a trail greater than 50” to allow access, as is, without the maintenance expectations. For the purposes of identifying and locating this proposed road, engineering has assigned the road numbers 732 and 732.A . These numbers have been researched and could be used as a new system road number.

Sub-Area 2 – Winter Trail, East Fall and West Fall Creek and NFSR 471 Eagle Creek

The only proposed change in this area is the decommissioning of NFSR 471.A Eagle Creek A. This is currently a ML1 road 0.5 miles in length.

Sub-Area 3 – Taylor Mesa, Stoner Mesa, Spring Creek, East Twin Spring and West Twin Spring

NFSR 545 Taylor Creek is currently a maintenance level 3 road for 13.89 miles. A road evaluation in the summer of 2014 revealed that at mile post 13.6 a significant change in road condition occurred. The surface becomes native at this location and the alignment no longer is suitable for passenger car travel. This location is well suited for transition as there is adequate flat areas and pull outs for passenger cars to turn around. As a result the action alternatives propose reducing the maintenance level of NFSR 545 from mile post 13.6 to 13.86.

NFSR 201 Pipe Creek currently is a ML2 road for 4.85 miles. This alignment begins to fail at approximately mile 3 but the prism is still maintainable to the identified closure point at the Loading Pen trail head. A turnaround protected by boulders should make the closure point defensible. The remaining 1.15 miles (proposed for decommissioning) has deep rutting, is heavily braided, and many user created routes traverse)the area.

NFSR 545.J has been proposed as a ML1 stored road. A gate has been estimated for the closure device for this segment however if the benefits have not changed a berm or boulders may be a more appropriate closure device.

Two non-system roads off of NFSR 686 Stoner Mesa have been proposed. The routes would be added as ML 2 roads maintained for high clearance vehicles. One of these roads is not within the RWD Landscape boundary and the other starts outside the boundary before terminating within the RWD landscape. From an Engineering perspective the upper alignment is a much better alternative than the lower. The lower is within the wetland polygon and 100 year flood plain. This lower alignment also has a very steep segment at the beginning that is approximately 20 feet long. This segment in particular if not the alignments as a whole would present annual maintenance issues. These segment could also be considered as a trail greater than 50" to allow access, as is, without the maintenance expectations. For the purposes of identifying and locating this proposed road engineering has assigned the road numbers 687 and 687.A.

NFSR 692 Pothole is a ML 3 road that does not have an adequate turnaround. The action alternatives propose to reduce NFSR 692 to a ML2. A location at mile post 1.46 has been identified that provides adequate space to construct a turnaround. The segment beyond this location has been proposed for decommissioning. This reduces maintenance needs for the decommissioned segment.

The action alternatives propose to close approximately 0.9 miles of NFSR 547 Taylor Mesa to avoid crossing Spring Creek. The segment beyond Spring Creek would be converted to single track trail. This proposal would also include constructing a turnaround at the new end of 547. This turn around would be constructed in a manner reflecting the characteristics of a ML3 road therefore the costs estimated in the implementation section are higher than those on a ML2 road. Long-term maintenance is reduced by these actions.

Sub-Area 4 – Priest Gulch, Lower Calico, Tenderfoot, and Wildcat Area

Only ML1 roads are proposed for decommissioning in this sub area. This action lessens the overall maintenance needs in the project area.

Sub Area 5 – Upper Calico, Johnny Bull, Eagle Peak Trail

A non-system road off of NFSR 539 Johnny Bull TH has been proposed to be added to the system as ML2. From an Engineering perspective the alignment is a risk for operation and maintenance. The alignment is within the wetland polygon and 100 year flood plain. This alignment has multiple truck size potholes, and considerable rutting and would present a many maintenance issues, without feasible solution. This segment could also be considered as a trail greater than 50" to allow access, as is, without the maintenance expectations. For the purposes of identifying and locating this proposed road engineering has assigned the road number 539.A.

The driveway for the Dunton Guard station is currently not listed as a system road. The action alternatives propose adding this short segment to the system as an Admin-only road. For the purposes of identifying and locating this proposed road engineering has assigned the road number 611.B.

A non-system road located off of NFSR 535 West Dolores just beyond the Black Mesa intersection has been proposed to be added to the system as ML2 road. From an Engineering perspective the alignment

is a risk for operation and maintenance. The alignment is within the wetland polygon and 100 year flood plain. This alignment is confined by thick willows, and has some potholing. This segment would present a many annual maintenance issues. This segment could also be considered as a trail greater than 50" to allow access, as is, without the maintenance expectations. For the purposes of identifying and locating this proposed road engineering has assigned the road number 535.B.

NFSR 538 Johnny Bull has been proposed for decommissioning which lessens maintenance needs in the area. This is in keeping with recommendations in the TAP.

Sub-Area 6 – Burnett Creek Horse Creek, and the Town of Rico

A turnaround and new terminus has been proposed on NFSR 423, a ML2 turnaround has been included in the implementation section below.

Sub-Area 7 – NFSR 578 Hermosa Park, NFSR 496 Barlow, and East Fork Creek Trail

Non-system road segments at Lizard Head Pass have been proposed to be added to the system as ML2 roads. The roads connect to segments located on the GMUG National Forest. For the purposes of identifying and locating these proposed roads engineering has assigned the road numbers to the segments 206 and 206.A. The GIS data has been updated to reflect adjacent segments not within San Juan Forest jurisdiction.

NFSR 496 Barlow is currently a ML 3 road from the Hermosa Park road. The action alternatives propose to reduce the ML of the first 0.4 miles to ML2, and the remainder to ML1 storage for future timber needs. A gate has been estimated as 3the closure device for this location. This is a reduction in miles greater than recommended in the TAP. Maintenance is reduced through these actions.

The action alternative propose the reduction of the maintenance level on a portion of NFSR 149 Hermosa Peak to ML1 storage closed to motorized public access. A gate has been calculated in the implementation section as the closure devise. This would reduce maintenance needs overall.

This sub-area does have one group of roads 578.B and 578.B1 that are proposed to have different implementation strategies. This group of roads are referred to as the Tin Can Basin roads and currently provide access to NFST 638 East Fork Trail, a single track motorized trail. These native surface roads tend to receive the majority of their use during hunting season when wet conditions lead to deep mud holes and braiding. Because of the remoteness of NFSR 578.B and 578.B1, maintenance of the road surface has historically been very rare and would continue to be rare in the future.

Under Alternative A, no change to the current road designations of 578 and 578B1. FR578 would be ML2 and FR578B1 would be both ML2 and ML1 with the closure point located at the current location where the road changes from ML2 to ML1. The current closure barrier has degraded and the public currently drives on the ML1 portion. Actions would be taken to re-establish the closure point.

Under the action alternatives B, C, D and E, NFSR 578.B and 578.B1 would be closed close to the junction with NFSR 578 and converted to a single track trail which would be motorized in Alts B, C and D and nonmotorized in Alternative E. This removes the need for maintenance in this remote location.

Sub-Area 8 – Ryman Creek, Lower Ryman, Scotch Creek, and NFSR 564 Roaring Fork

NFSR's 564.D is proposed for upgrade to a ML2 road which adds to overall maintenance needs. This road was originally evaluated

Sub-Area 9 – Bear Creek, Little Bear, Grindstone, Rough Canyon, Hillside Drive, and Roaring Fork

NFSR 436 Hillside Drive is currently a ML3 road for 12.89 miles a road evaluation in the summer of 2014 revealed that at mile post 12.2 a significant change in road condition occurred. The surface becomes native at this location and the alignment no longer is suitable for passenger car travel. This location is well suited for transition as there is adequate flat areas and pull outs for passenger cars to turn around. As a result the action alternatives propose reducing the maintenance level of NFSR 436 from mile post 12.2 to 12.89. This change add 0.69 miles of ML2 road to the system.

Approximately ½ of NFSR 208 is proposed for decommissioning and the other ½ is proposed to remain ML2 in sub-area 9. This reduces maintenance needs.

Number	Name		Also proposed to remain on road system in Alternatives B-E	Why different?
<u>ML4 Roads Recommended to Keep on System in TAPR</u>				
533	GROUND HOG		Yes but as ML3	Recreation, Forest Management and Maintenance Costs
<u>ML3 Roads Recommended to Keep on System in TAPR</u>				
496	BARLOW		Yes but as ML2 and ML1	Recreation, Water Quality and Road Maintenance Costs
867	BEAR CRK TH		Yes	
611	BLACK MESA		Yes	
691	BURRO BRIDGE CG		Yes	
471.B	CALICO TH		Yes	
476	CAYTON CG		Yes	
471	EAGLE CRK		Yes	
540	GEYSER SPRING TH		Yes	
578	HERMOSA PARK		Yes	
436	HILLSIDE DRIVE		Yes	
534	LONE CONE		Yes	

Number	Name		Also proposed to remain on road system in Alternatives B-E	Why different?
534	LONE CONE		Yes	
688	LOWER STONER TH		Yes	
689	MAVREESO CG		Yes	
535.A	NAVAJO TH		Yes	
692	POTHOLE		Yes but downgrade to ML2 and decommission last .62 miles	Recreation, Forest Management, Road Maintenance Costs
548	PRIEST GULCH TH		Yes	
435	ROARING FORK		Yes	
686	STONER MESA		Yes	
545	TAYLOR CRK		Yes except .25 miles downgrade to ML2	Recreation, Road Maintenance Costs
545	TAYLOR CRK		Yes	
545	TAYLOR CRK		Yes	
547	TAYLOR MESA		Yes	
547	TAYLOR MESA		Yes but Convert .45 miles to trail	Fish Barrier, Recreation, Road Maintenance Costs
547	TAYLOR MESA		Yes	
535	WEST DOLORES		Yes	
690	WEST DOLORES CG		Yes	
727	WILLOW DIVIDE		Yes but ML2	Recreation, Forest Management and Road Maintenance Costs
ML2 Roads Recommended to Keep on System in TAPR				
231	AZTEC MINE		Yes	
496	BARLOW		Yes but convert one section to ML1 and decommission another section	Forest Management, Road Maintenance Costs

Number	Name		Also proposed to remain on road system in Alternatives B-E	Why different?
611	BLACK MESA		yes	
611.A	BLACK MESA A		yes	
404	BLACK MESA SPUR		Yes but decommission last .62 miles	Recreation, Wetland Protection
422	BURNETT		Yes but decommission last .5 miles	Already grown in and not needed
422	BURNETT		Yes	
422.A	BURNETT A		Yes	
305	CLEAR FISH		Yes	
305	CLEAR FISH		Yes	
564	DIVIDE		Yes	
564.A	DIVIDE A		Yes	
204	EAST FORK		Yes	
204.A	EAST FORK A		Yes	
726	FISH CRK		Yes	
452	FISH CRK DITCH		Yes but convert 1 mile to ML2-Admin	Ditch Access
248	GENERAL TAYLOR		Yes	
358	GRINDSTONE		Yes but decommission last .25 miles	Recreation, Forest Management, Road Maintenance Costs
403	GROUNDHOG POINT		Yes	
555	HELL CANYON		Yes	
578	HERMOSA PARK		Yes	
149	HERMOSA PEAK		Yes but change .40 miles to ML1	Fens, Wetlands, Recreation
436	HILLSIDE DRIVE		Yes	
423	HORSE GULCH		Yes but change .05 miles to ML2-Admin	Private Land access

Number	Name		Also proposed to remain on road system in Alternatives B-E	Why different?
539	JOHNNY BULL TH		Yes	
864	LITTLE HELL		Yes	
424	LIZARD HEAD		Yes	
534	LONE CONE		Yes	
534.E	LONE CONE E		Yes but decommission last .40 miles	
534.J	LONE CONE J		No – Convert to trail	Recreation, Wetlands, Road Maintenance Costs
534.J1	LONE CONE J1		No – Decommission	Recreation, Wetland and Water Quality, Road Maintenance Costs
534.L	LONE CONE L		Yes	
616	MIDDLE PEAK		Yes	
616.A	MIDDLE PEAK A		Yes but change to ML1	Road Maintenance Costs
207	MORGAN CAMP		Yes	
201	PIPE CRK		Yes but decommission last 1.14 miles	Recreation, Wildlife Security, Road Maintenance
201	PIPE CRK		Yes	
670	RICO GUARD STN		Yes	
208	RIO LADO		Yes but decommission last .86 miles	Recreation, Forest Management, Road Maintenance
435	ROARING FORK		Yes	
550.1	SCOTCH CRK		Yes	
592	SHOAS PARK		Yes	
875	SUNSHINE		Yes	
545.J	TAYLOR CRK J		Yes but change to ML1	Road Maintenance Costs, Wetlands
547	TAYLOR MESA		Yes but convert .52 miles to trail	Fish Barrier, Road Maintenance Costs
547.B	TAYLOR MESA B		Yes	

Number	Name		Also proposed to remain on road system in Alternatives B-E	Why different?
578.B	TIN CAN BASIN		Yes but only keep .12 miles - convert one section to trail, decommission other section	Recreation, Road Maintenance Costs
578.B1	TIN CAN BASIN SPUR		No – convert to one section to trail and decommission other section	Recreation, Road Maintenance Costs
727	WILLOW DIVIDE		Yes	
534J2	Not listed in TAPR		No – convert to trail	Recreation, Wetlands, Road Maintenance
534I	Not listed in TAPR		No - decommission	Recreation, Wetlands
534K	Not listed in TAPR		No - decommission	Recreation, Wetlands, Road Maintenance Costs
422A1	Not Listed in TAPR		Yes but change to ML2-Admin	Private Land Access not needed for general recreation